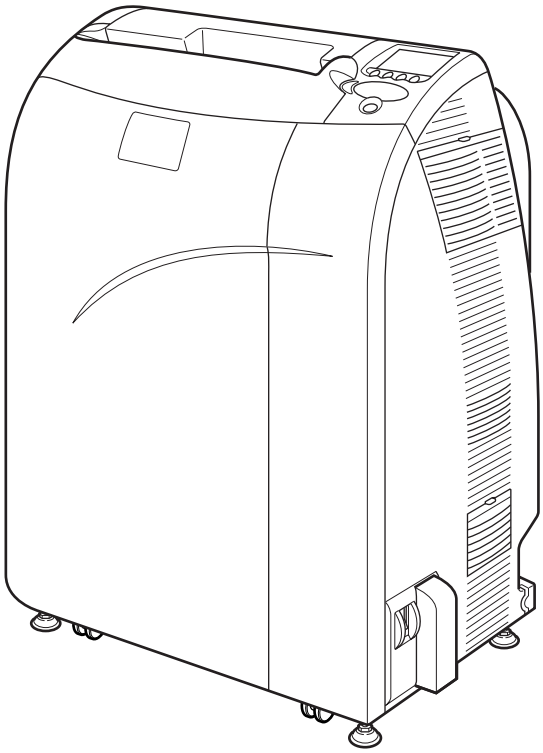
FUJIFILM

FCR XC-1

(CR-IR 355RU)

Operation Manual

First Edition: November 2005



1 For Safe Operation

2 Product Overview

3 Basic Operation

4 Utility

5 Troubleshooting

6 Care and Maintenance

Appendix

Maintenance and Inspection

Index

Fuji Photo Film Co., Ltd.

This Operation Manual describes details on how to operate the FCR XC-1 (CR-IR 355RU) and cautions to be observed when operating it.
Please read the Operation Manual thoroughly before actually operating the FCR XC-1 (CR-IR 355RU) system. After reading this manual, store it nearby the FCR XC-1 (CR-IR 355RU) so that you can see it whenever necessary.

11.2005 897N0565

Introduction

The indications for use of the FCR XC-1 (CR-IR 355RU) Image Reader with Imaging Plate (IP) reading is the identification, capture, digitization, and processing of diagnostic X-ray images of human anatomy, and associating patient and exam identification with the images.

This Operation Manual is applicable to the following software.
- FCR XC-1 main unit software V1.0 or later

The FCR XC-1 (CR-IR 355RU) is equipment designed to scan an X-ray image formed on an imaging plate (IP), being an image reading unit used for the CR-IR 355RU Fuji Computed Radiography system.
An IP is used as an X-ray image detector. It records the image information of an image captured by an X-ray exposure.

The FCR XC-1 (CR-IR 355RU) Operation Manual (hereafter referred to as this manual) provides information necessary for the use of the FCR XC-1 (CR-IR 355RU), including an overview of the FCR XC-1 (CR-IR 355RU), operation instructions and operation precautions, daily checks and maintenance, and so on.

CAUTIONS

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Caution: Rx Only (Federal law restricts this device to sale by or on the order of a physician.)

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Contents at a Glance

Chapter 1 **For Safe Operation** 1
This chapter presents Warnings and Cautions you should observe for safe operation of the FCR XC-1 (CR-IR 355RU).

Chapter 2 **Product Overview** 2
This chapter presents major features, unit names and functions of the FCR XC-1 (CR-IR 355RU).

Chapter 3 **Basic Operation** 3
This chapter provides instructions on how to start up/shut down the FCR XC-1 (CR-IR 355RU) and how to read an image.

Chapter 4 **Utility** 4
This chapter explains how to perform scanner cleaning.

Chapter 5 **Troubleshooting** 5
This chapter describes how to troubleshoot in the event of an error on the FCR XC-1 (CR-IR 355RU), and provides explanations about a list of error messages each of which appears when an error occurs.

Chapter 6 **Care and Maintenance** 6
This chapter describes daily checks and maintenance you are advised to perform so that you can use the FCR XC-1 (CR-IR 355RU) in optimum working conditions.

Appendixs

- Appendix A Specifications
- Appendix B IP Handling
- Appendix C About Text Information Printed on Film
- Appendix Y Image Processing Parameters
- Appendix Z Precautions for Exposure

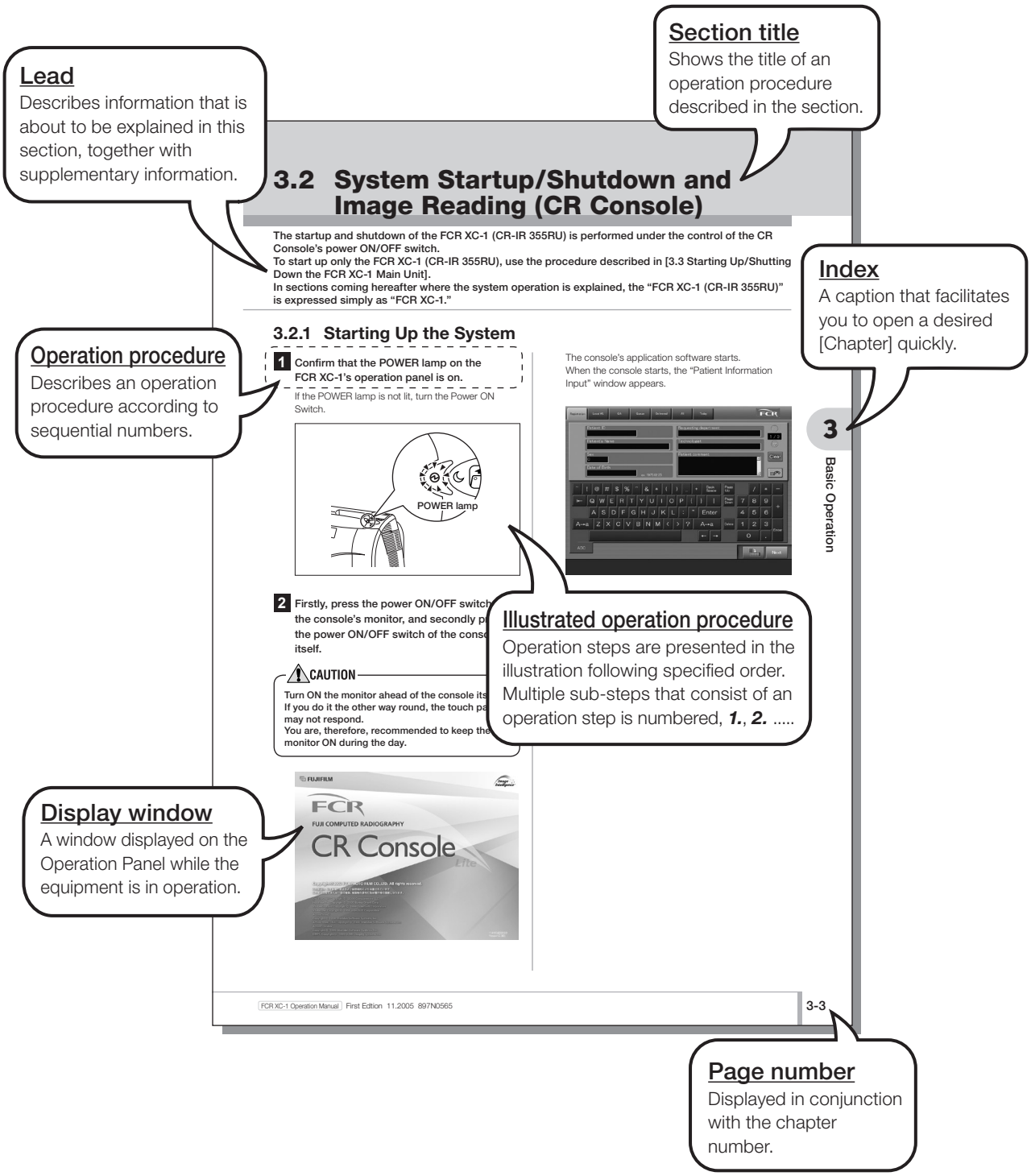
Maintenance and Inspection

Index

How to Read This Manual

Basic page configuration

Please have a good grasp of the basic page configuration of this manual, as illustrated below, for you to use it more efficiently.

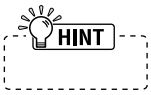

Section title
Shows the title of an operation procedure described in the section.
Lead
Describes information that is about to be explained in this section, together with supplementary information.
3.2 System Startup/Shutdown and Image Reading (CR Console)
The startup and shutdown of the FCR XC-1 (CR-IR 355RU) is performed under the control of the CR Console's power ON/OFF switch.
To start up only the FCR XC-1 (CR-IR 355RU), use the procedure described in [3.3 Starting Up/Shutting Down the FCR XC-1 Main Unit].
In sections coming hereafter where the system operation is explained, the "FCR XC-1 (CR-IR 355RU)" is expressed simply as "FCR XC-1."
Index
A caption that facilitates you to open a desired [Chapter] quickly.
3.2.1 Starting Up the System
Operation procedure
Describes an operation procedure according to sequential numbers.
1 Confirm that the POWER lamp on the FCR XC-1's operation panel is on.
If the POWER lamp is not lit, turn the Power ON Switch.
POWER lamp
The console's application software starts.
When the console starts, the "Patient Information Input" window appears.
2 Firstly, press the power ON/OFF switch
the console's monitor, and secondly p
the power ON/OFF switch of the cons
itself.
CAUTION
Turn ON the monitor ahead of the console its
If you do it the other way round, the touch pa
may not respond.
You are, therefore, recommended to keep the
monitor ON during the day.
Illustrated operation procedure
Operation steps are presented in the illustration following specified order. Multiple sub-steps that consist of an operation step is numbered, 1., 2. .....
Display window
A window displayed on the Operation Panel while the equipment is in operation.
FUJIFILM
FCR
FUJI COMPUTED RADIOGRAPHY
CR Console
3 Basic Operation
FCR XC-1 Operation Manual First Edtion 11.2005 897N0565
3-3
Page number
Displayed in conjunction with the chapter number.

Marks

Information items to be observed when you are operating this system and the supplementary remarks are described in this manual with the respective marks.
For the safe system operation, be sure to observe **Warning**/Caution.

Indicates hazardous situations that may lead to serious injury or even death if the precaution is not or could not be followed.

Indicates hazardous situations that may lead to mild or moderate injury or physical damages if the caution is not or cannot be followed.



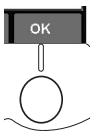
Shows an item helpful for further effective system operation.

Shows a more detailed operation method or an item that describes additional information.

Expressions

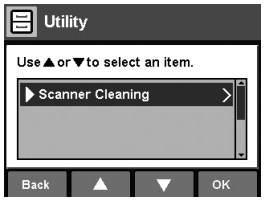
Names of menu keys , windows, and messages are as follows.

● **Buttons for selection menus (example)**



[**OK**]
Shows the manipulation to press the button for a selection menu displayed on the window.

●**Windows (example)**

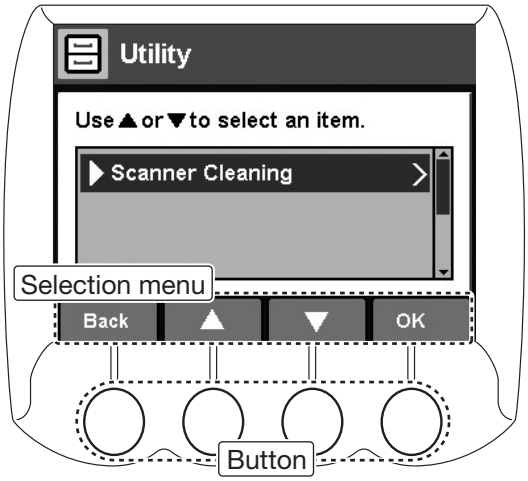


"Utility Top" window

●**Messages (example)**

Take out the cassette. <Take out the cassette.>

Windows



Use the buttons located below the selection-menu display area for manipulation purposes.

Contents

Chapter 1 For Safe Operation

1.1 Precautions Before Operating This Equipment 1-2
1.2 Precautions to be Observed When Using the Electric Medical Equipment 1-3
1.3 Safety 1-4
1.4 Electromagnetic Compatibility (EMC) 1-6
1.5 Precautions to Take When Using the FCR XC-1 (CR-IR 355RU) 1-10
1.6 Location of Each Label 1-12

Chapter 2 Product Overview

2.1 Features of the FCR XC-1 (CR-IR 355RU) 2-2
2.2 Units Names and the Functions 2-4
2.2.1 FCR XC-1 (CR-IR 355RU) Main Unit 2-4
2.2.2 Operation Panel 2-5
2.2.3 Display 2-6
2.2.4 Processing Status Bar 2-8

Chapter 3 Basic Operation

3.1 Before Use 3-2
3.1.1 Performing Image Erasure 3-2
3.2 System Startup/Shutdown and Image Reading (CR Console) 3-3
3.2.1 Starting Up the System 3-3
3.2.2 Shutting Down the System 3-4
3.2.3 Reading Cassette Images 3-5
3.3 Starting Up/Shutting Down the FCR XC-1 Main Unit 3-6

Chapter 4 Utility

4.1 Starting Up and Quitting the Utility 4-2
4.2 Cleaning the Scanner 4-3

Chapter 5 Troubleshooting

5.1 Troubleshooting 5-2
5.2 If the FCR XC-1 Cannot be Powered ON 5-3
5.3 If the FCR XC-1 Cannot be Powered OFF 5-4
5.4 When An Error Message Appears 5-5
5.5 When Image Is Streaked 5-9

Chapter 6 Care and Maintenance

6.1 About Performing Daily Checks and Maintenance 6-2
6.2 Cleaning the Cassette Set Unit 6-3
6.3 Cleaning the Air Intakes and Exhaust Ports 6-4
6.4 Users Checksheet 6-5

Appendix A Specifications

A.1 Specifications A-2
A.1.1 Details of Equipment Specifications A-2
A.1.2 Operating Performance A-3
(1) Processing capacity A-3
(2) Time required for monitor image display A-3
(3) Time required for generating film prints A-3
(4) Required specifications and other A-3
A.1.3 Applicable Safety Standard A-4
A.2 External View and Weight A-5

Appendix B IP Handling

1. IP Image Erasure Operation B-2
2. Handling, Daily Care, and Storage of IPs B-3

Appendix C About Text Information Printed on Film

Appendix Y Image Processing Parameters

Y_I Exposed Anatomical Regions/Applicable Menus/ Display Parameters ..... Y_I-1

Y_{IV} Flexible Noise Control Software Parameters ..... Y_{IV}-1

Appendix Z Precautions for Exposure

Precautions to Take Before Exposure Z-2

Precautions to Take in Each Mode Z-3

1 Precautions for Exposure in the AUTO MODE Z-3

1.1 Radiation Field and IP Split Pattern Recognition Z-3

1.2 Depiction of the Cervical Region Z-4

1.3 Depiction of HIP JOINT AXL - 2 ..... Z-4

1.4 Cautions for “PANTOMO” X-ray Exposures Using a 10"×12" Cassette Z-5

1.5 EDR Image Data Analysis Z-5

2 Precautions for Exposure in the SEMI-AUTO MODE Z-6

3 Precautions for Exposure in the SEMI-X MODE Z-6

4 Precautions for Exposure in the FIX MODE Z-6

Maintenance and Inspection

Index

Chapter 1

For Safe Operation

Pages

1.1 Precautions Before Operating This Equipment ____ 1-2
1.2 Precautions to be Observed When Using the Electric Medical Equipment ____ 1-3
1.3 Safety ____ 1-4
1.4 Electromagnetic Compatibility (EMC) ____ 1-6
1.5 Precautions to Take When Using the FCR XC-1 (CR-IR 355RU) ____ 1-10
1.6 Location of Each Label ____ 1-12

1.1 Precautions Before Operating This Equipment

Before using this equipment, please read "Precautions Before Operating This Equipment" carefully so that you can operate it correctly.
Whenever you operate this equipment, be sure to observe those precautions. Failure to do so may cause you to subject to injuries or property damage to occur.

This system is classified as a medical device under EC Directive 93/42/EEC. This equipment has been designed on the assumption that the patient would not come into direct contact with it or for operation by appropriately trained operator.

Process waste correctly, as stipulated by local law or any regulations that apply.

1.2 Precautions to be Observed When Using the Electric Medical Equipment

We ask that you heed these usage precautions and use the equipment correctly.

1. This equipment should be used only by people who have the proper skills.

2. Heed the following precautions when installing the equipment.
- **2-1.** Install the equipment where water will not splash it.
- **2-2.** Install the equipment where it will not be adversely affected by air pressure, temperature, humidity, ventilation, sunlight, dust or the presence of salt, sulfur or like substances in the atmosphere.
- **2-3.** Make sure the equipment will remain in stable condition on a level surface and not be subjected to vibration or shock.
- **2-4.** Do not install the equipment in places where chemicals are stored or gases emitted.
- **2-5.** Make sure that the power frequency, voltage and power consumption are appropriate.
- **2-6.** Connect the ground wire correctly.

3. Observe the following precautions before beginning to use the device.
- **3-1.** Inspect the switch contacts, polarities, dial settings and meters and confirm that the equipment is functioning properly.
- **3-2.** Confirm that the ground wire has been completely connected.
- **3-3.** Make sure that all cords have been connected properly and safely.
- **3-4.** Be aware that correct diagnosis can be hindered and danger can result from using different pieces of equipment together.

4. Heed the following precautions after using the equipment.
- **4-1.** Using the established procedure, restore the operation switches, dials, etc., to what they were prior to use and then turn the power off.
- **4-2.** When unplugging cords, do not pull on the body of the cord itself or apply unnecessary force.
- **4-3.** After using the accessories, recollect them and put them back in order.

5. If there is trouble with the equipment, do not attempt to fix it randomly. Instead, do what is indicated and entrust repairs to a professional.

6. Do not remodel the equipment.

7. Maintenance and Inspection
- **7-1.** Make inspect the equipment and parts periodically.
- **7-2.** If the equipment has not been used for a long time, make sure that it operates normally and safely prior to using it again.

8. Other Items
- **8-1.** When subjecting patients (particularly infants and pregnant women) to radiation, make sure not to exceed the necessary time and dose. Also, ensure that radiation is contained within the region for exposure.
- **8-2.** Follow the Operation Manual and operate the equipment correctly.

1.3 Safety

Prior to using this equipment, please carefully read safety precautions presented herein for you to operate it correctly.

Laser Handling Precautions

This equipment is a Class 1 laser product (IEC60825-1: 2001/EN60825-1: 2002).

FCR XC-1 (CR-IR 355RU) Laser Unit Specifications

Class	:	3B
Medium	:	Semiconductor laser
Wavelength	:	660 nm
Maximum Output	:	50 mW (CW)

⚠WARNING

The FCR XC-1 (CR-IR 355RU) incorporates a Class 3B laser with maximum output of 50mW.
To prevent exposure to its laser beams, observe the following precautions.
- **Never open or remove the protective covers.**
- **Always contact a qualified service engineer immediately if you suspect there is a malfunction.**

⚠CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Classification

1) According to the type of protection against electrical shock
   CLASS 1 EQUIPMENT
2) According to the degree of protection against electric shock
   NO APPLIED PART
3) Protection against harmful ingress of water
   IPXO
4) According to the degree of safety of application in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.
   Equipment not suitable for use in the presence of a flammable anesthetics mixture with air or with oxygen or nitrous oxide.
5) According to the mode of operation
   CONTINUOUS OPERATION

General Precautions Against Electrical Shock

⚠WARNING

The service voltage of this equipment is AC100V to 240V.
Instructions below must be followed to prevent an electrical shock to users.

- **Never open equipment covers. Do not touch high-voltage units of the equipment with your hand, otherwise you may receive an electrical shock.**
- **Install the equipment where no water may subject the equipment.**
- **Ensure that the equipment is properly grounded.**
- **Check that all the cables are properly and perfectly connected.**
- **When using the equipment within the environment where the patient may get into touch with it, optionally connect additional protective earth conductor (FCR XC-1 (CR-IR 3555RU)).**
- **When using the equipment within the environment where the patient may get into touch with it, connect the power supply unit to a medical-use plug via an optional insulating power transformer (CR Console (CR-IR 348CL)).**

1.4 Electromagnetic Compatibility (EMC)

This equipment has been tested and found to comply with the limits for medical devices to the EN60601-1-2:2001, Medical Device Directive 93/42/EEC.
These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to other devices, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving device.
- Increase the separation between the equipment.
- Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
  Consult the manufacturer or field service technician for help.

Further information for IEC60601-1-2:2001

- Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the accompanying documents.
- Portable and mobile RF communications equipment can affect medical electrical equipment.
- The use of accessories, transducers and cables other than those specified, with the exception of transducers and cables sold by FUJI PHOTO FILM CO., LTD. as replacement parts for internal components, may result in increased emissions or decreased immunity of the FCR XC-1 (CR-IR 355RU).

List of Cables

Name	Fuji Photo Film Parts code	General Specification
I/F Cable	–	TIA/EIA-568 Cat5 or more. Straight cable of UTP type.

- The FCR XC-1 (CR-IR 355RU) should not be used adjacent to or stacked with other equipment.
  If adjacent or stacked use is necessary, the FCR XC-1 (CR-IR 355RU) should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacturer's declaration - electromagnetic emissions		
The CR-IR 355RU is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 355RU should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The CR-IR 355RU uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The CR-IR 355RU is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC61000-3-3	Complies	

Guidance and manufacturer's declaration - electromagnetic immunity			
The CR-IR 355RU is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 355RU should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC61000-4-2	±6kV contact ±8kV air	±2kV contact ±4kV contact ±6kV contact ±2kV air ±4kV air ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/ burst IEC61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines ±1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	±1kV differential mode ±2kV common mode	±1kV differential mode ±2kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations of power supply input lines IEC61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the CR-IR 355RU requires continued operation during power mains interruptions, it is recommended that the CR-IR 355RU be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity			
The CR-IR 355RU is intended for use in the electromagnetic environment specified below. The customer or the user of the CR-IR 355RU should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the CR-IR 355RU, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1.2\sqrt{P}$
Radiated RF IEC61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
a Field strength from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CR-IR 355RU is used exceeds the applicable RF compliance, the CR-IR 355RU should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the CR-IR 355RU. b Over the frequency range 150 kHz to 80 MHz, field strength should be less than 3 V/m.			

Recommended separation distances between Portable and mobile RF communications equipment and the CR-IR 355RU

The CR-IR 355RU is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled.
The customer or the user of the CR-IR 355RU can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CR-IR 355RU as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter** m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations.
Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

1.5 Precautions to Take When Using the FCR XC-1 (CR-IR 355RU)

1. Do not apply excessive force to a cassette when it is being inserted and also while it sits inside to keep the FCR XC-1 (CR-IR 355RU) from toppling over and to prevent possible injury to you.
2. When a long-view cassette is used, be sure to install toppling-prevention measures.
   If excessive force is applied to such a cassette being inserted in the FCR XC-1 (CR-IR 355RU), the FCR XC-1 (CR-IR 355RU) may topple over and cause injury.
3. Do not sit on the FCR XC-1 (CR-IR 355RU) or apply your weight to it by leaning forward and placing your hands on the FCR XC-1 (CR-IR 355RU) to keep the FCR XC-1 (CR-IR 355RU) from toppling over and to prevent possible injury.
4. Do not sit on the FCR XC-1 (CR-IR 355RU) or apply your weight to it by leaning forward and placing your hands on the FCR XC-1 (CR-IR 355RU) to keep the FCR XC-1's (CR-IR 355RU) Cassette set unit from breaking and to prevent possible injury from fragments or the like.
5. Do not put your finger into the FCR XC-1's (CR-IR 355RU) Cassette set unit since your finger may touch sharp edges inside and cut yourself.
6. When you insert a cassette into the FCR XC-1 (CR-IR 355RU), be careful not to get your fingers caught between the cassette and the cover.
7. When using the FCR XC-1 (CR-IR 355RU) with a keyboard placed on it, make certain that the keyboard base is tucked away securely and then insert a cassette into the FCR XC-1 (CR-IR 355RU). Otherwise, you may be injured if your hand hits the keyboard.
8. Since system sensitivity (S value) varies over time and by other factors including system trouble, never use it for radiation-dose and/or AEC (phototimer) setting purposes.
9. If you use the S value as a measure of exposure dose for image-quality and exposed-dose control purposes or when you use FNC (Flexible Noise Control) processing, periodically determine whether the S value has changed noticeably in the meantime.
10. After checking information attached to radiographic images for correctness, use such information for image interpretation work.
11. Before inserting a cassette into the FCR XC-1 (CR-IR 355RU), verify patient identification without fail by means of the patient's full name, birthdate and the like.
12. Before inserting a cassette into the FCR XC-1 (CR-IR 355RU), be sure to read the exposure menu .
13. Before inserting a cassette into the FCR XC-1 (CR-IR 355RU), make sure that the FCR XC-1 (CR-IR 355RU) is in image-reading mode. This is because cassette erasure will take place if the FCR XC-1 (CR-IR 355RU) is in erase mode.
14. Do not subject the equipment or cassette to vibration while an image is being read. Otherwise, an image with unevenness or the like may be output, which will adversely affect image reading.
15. When you install the FCR XC-1 (CR-IR 355RU) close to a wall, use caution not to block its air outlet openings.
    If the temperature inside the FCR XC-1 (CR-IR 355RU) rises abnormally high, the image on the IP may be imperfectly erased, possibly causing an output image that does not allow accurate image interpretation.

16. Clean the air outlet openings periodically to keep them clear of dust or the like which can cause blocking. If they are blocked, the temperature inside the FCR XC-1 (CR-IR 355RU) rises abnormally high and the image on the IP may be imperfectly erased, possibly causing an output image that does not allow accurate image interpretation.

17. An inserted cassette should not be taken out until the cassette ejection lamp blinks (blue) and the message “Take out the cassette” is displayed.
If you try to pull out such an in-process cassette, it becomes the unremovable.

18. Do not insert an unspecified cassette into the Image Reader. If an unspecified cassette is inserted into the Image Reader, image reading is disabled. Be sure to use a specified cassette.

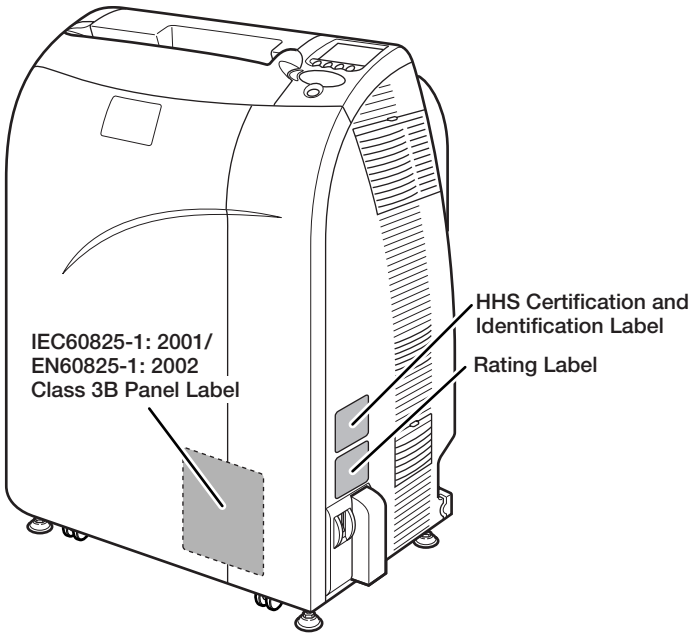
19. Do not place an unspecified IP into the cassette, otherwise an image that may affect image reading can be output.

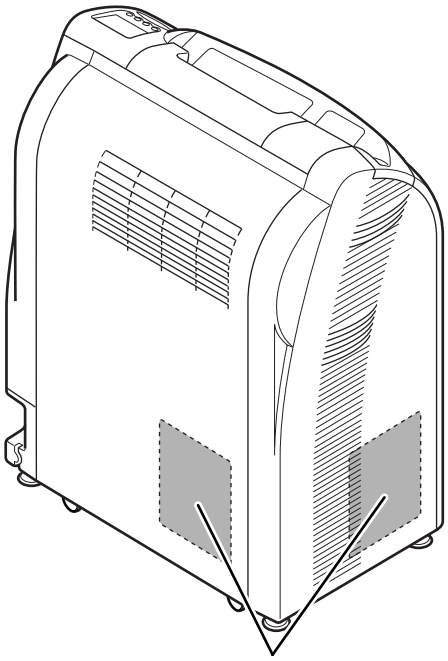
20. Replace the erasure lamp when the message prompting for replacement is displayed.
For the replacement of the lamp, please contact your local authorized distributor. When the lamp fails, image erasure becomes impossible.

21. If IP erasure processing results incomplete because an IP type older than ST-VN was used, contact your local authorized distributor.

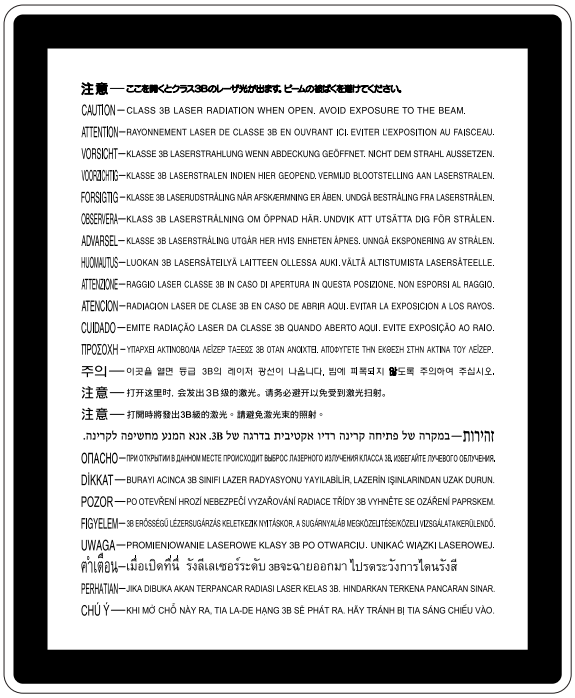
1.6 Location of Each Label

Shown below are the positions where the FCR XC-1 (CR-IR 355RU) labels are affixed.





IEC60825-1: 2001/EN60825-1: 2002
Class 3B Panel Label


注意 — ここを開くとクラス3Bのレーザ光が出ます。ビームの線はくを避けてください。
CAUTION — CLASS 3B LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.
ATTENTION — RAYONNEMENT LASER DE CLASSE 3B EN OUVRANT ICI. EVITER L'EXPOSITION AU FAISCEAU.
VORSICHT — KLASSE 3B LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
VOORZICHTIG — KLASSE 3B LASERSTRALEN INDIEN HIER GEOPEND. VERMIJD BLOOTSTELLING AAN LASERSTRALEN.
FORSIGTIG — KLASSE 3B LASERUDSTRÅLING NÅR AFSKÆRMNING ER ÅBEN. UNDGÅ BESTRÅLING FRA LASERSTRÅLEN.
OBSERVERA — KLASS 3B LASERSTRÅLNING OM ÖPPNAD HÄR. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
ADVARSEL — KLASSE 3B LASERSTRÅLING UTGÅR HER HVIS ENHETEN ÅPNES. UNNGÅ EKSPONERING AV STRÅLEN.
HUOMAUTUS — LUOKAN 3B LASERSÄTEILYÄ LAITTEEN OLLESSA AUKI. VÄLTÄ ALTISTUMISTA LASERSÄTEELLE.
ATTENZIONE — RAGGIO LASER CLASSE 3B IN CASO DI APERTURA IN QUESTA POSIZIONE. NON ESPORSI AL RAGGIO.
ATENCION — RADIACION LASER DE CLASE 3B EN CASO DE ABRIR AQUI. EVITAR LA EXPOSICION A LOS RAYOS.
CUIDADO — EMITE RADIAÇÃO LASER DA CLASSE 3B QUANDO ABERTO AQUI. EVITE EXPOSIÇÃO AO RAIO.
ΠΡΟΣΟΧΗ — ΥΠΑΡΧΕΙ ΑΚΤΙΝΟΒΟΛΙΑ ΛΕΪΖΕΡ ΤΑΞΕΟΣ 3Β ΟΤΑΝ ΑΝΟΙΚΤΕΙ. ΑΠΟΦΥΓΕΤΕ ΤΗΝ ΕΚΘΕΣΗ ΣΤΗΝ ΑΚΤΙΝΑ ΤΟΥ ΛΕΪΖΕΡ.
주의 — 이곳을 열면 등급 3B의 레이저 광선이 나옵니다. 빔에 피폭되지 않도록 주의하여 주십시오.
注意 — 打开这里时，会发出 3B 级的激光。请务必避开以免受到激光扫射。
注意 — 打開時將發出3B級的激光。請避免激光束的照射。
זהירות — במקרה של פתיחה קרינה רדיו אקטיבית בדרגה של 3B. אנא המנע מחשיפה לקרינה.
ОПАСНО — ПРИ ОТКРЫТИИ В ДАННОМ МЕСТЕ ПРОИСХОДИТ ВЫБРОС ЛАЗЕРНОГО ИЗЛУЧЕНИЯ КЛАССА 3Б, ИЗБЕГАЙТЕ ЛУЧЕВОГО ОБЛУЧЕНИЯ.
DİKKAT — BURAYI ACINCA 3B SINIFI LAZER RADYASYONU YAYILABİLİR. LAZERİN IŞINLARINDAN UZAK DURUN.
POZOR — PO OTEVŘENÍ HROZÍ NEBEZPEČÍ VYZAŘOVÁNÍ RADIACE TŘÍDY 3B VYHNĚTE SE OZÁŘENÍ PAPRSKEM.
FIGYELEM — 3B ERŐSSÉGŰ LÉZERSUGÁRZÁS KELETKEZIK NYITÁSKOR, A SUGÁRNYALÁB MEGKÖZELÍTÉSE/KÖZELI VIZSGÁLATA KERÜLENDŐ.
UWAGA — PROMIENIOWANIE LASEROWE KLASY 3B PO OTWARCIU. UNIKAĆ WIĄZKI LASEROWEJ.
คำเตือน — เมื่อเปิดที่นี่ รังสีเลเซอร์ระดับ 3Bจะฉายออกมา ไปรตระวังการโดนรังสี
PERHATIAN — JIKA DIBUKA AKAN TERPANCAR RADIASI LASER KELAS 3B. HINDARKAN TERKENA PANCARAN SINAR.
CHÚ Ý — KHI MỞ CHỖ NÀY RA, TIA LA-DE HẠNG 3B SẼ PHÁT RA. HÃY TRÁNH BỊ TIA SÁNG CHIẾU VÀO.

IEC60825-1: 2001/EN60825-1: 2002
Class 3B Panel Label
(This label is affixed to the inside of the cover and is invisible from the outside.)

FUJI PHOTO FILM CO., LTD.
26-30, NISHIAZABU 2-CHOME, MINATO-KU,
TOKYO 106-8620, JAPAN
MODEL CR-IR 355RU
SERIAL No.
MANUFACTURED
FFTPH
Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated (July 26, 2001).

HHS Certification and Identification Label

Rating Label

Chapter 2

Product Overview

Pages

2.1 Features of the FCR XC-1 (CR-IR 355RU) 2-2

2.2 Units Names and the Functions 2-4

2.2.1 FCR XC-1 (CR-IR 355RU) Main Unit 2-4

2.2.2 Operation Panel 2-5

2.2.3 Display 2-6

2.2.4 Processing Status Bar 2-8

2.1 Features of the FCR XC-1 (CR-IR 355RU)

The FCR XC-1 (CR-IR 355RU) is equipment designed to read X-ray image information recorded on an imaging plate (IP). The IP is used as an X-ray image detector. It records the image information of an image captured by an X-ray exposure.
This section explains features of a system employing the FCR XC-1 (CR-IR 355RU) and FCR XC-1 (CR-IR 355RU)-equipped system configuration examples.

The system can be used for chest, abdomen, bone, spine, head and other plain X-ray imaging, as well as spinal canal, bronchial tube, urinary organ, and other contrast medium X-ray imaging and X-ray tomography.

Major features of the system include:

1 By virtue of the effects of digital image processing, the system produces radiographs that have a high diagnostic value and are easy to interpret.

2 The system has a wide latitude for incident X-rays so that a large amount of X-ray diagnostic information can be obtained.

3 The system features high sensitivity, making it possible to reduce X-ray radiation doses or exposure to patients.

4 As the system takes an advantage of a wide latitude and an automatic sensitivity adjustment function, the image reading results of radiographs remain virtually unaffected by small variations in X-ray exposure conditions. Therefore, high image-density consistency can be obtained among radiographs.

5 Exposure information items that include patient information, anatomical regions and exposure menus can be entered on the console connected to the FCR XC-1 (CR-IR 355RU).

6 Since the FCR XC-1 (CR-IR 355RU) is designed to have a small depth, it can be installed in relatively tight spaces.

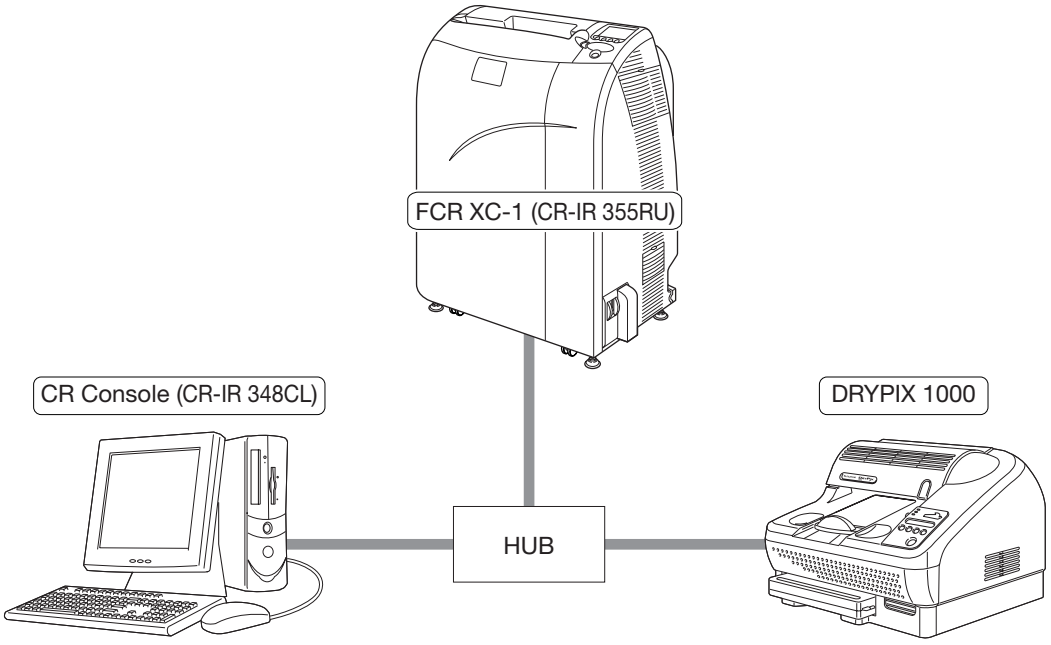
■ Connectable console

The console shown below can be connected.

- CR Console (CR-IR 348CL)

The FCR XC-1 (CR-IR 355RU) can be network-connected to a Console or printer or the like.
Illustrated below is an example of system configurations for the connected for FCR XC-1 (CR-IR 355RU) and Console.
Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment).
Furthermore all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. If in doubt, consult the technical services department or your local representative.

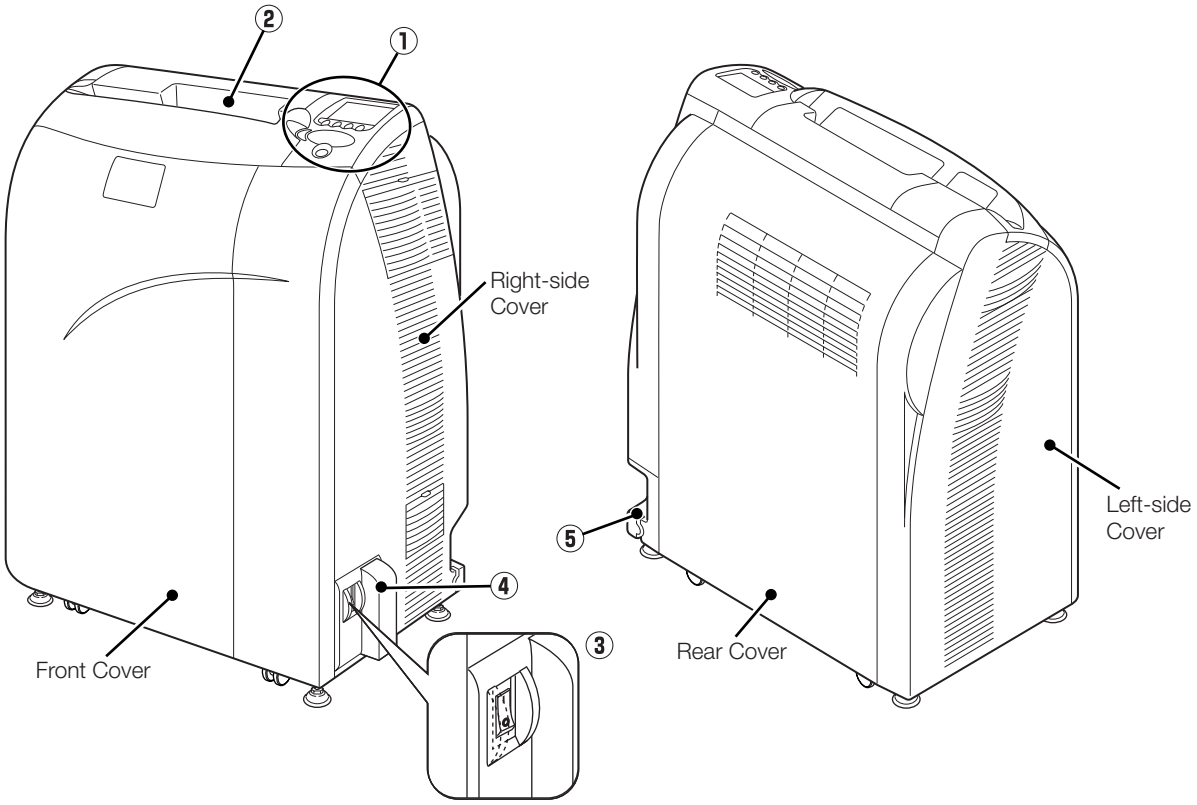
■ System configuration example



2.2 Units Names and the Functions

Described below are units component of the FCR XC-1 (CR-IR 355RU) main unit and the Operation Panel. Also presented are configuration of windows that open during the operation and error display configuration.

2.2.1 FCR XC-1 (CR-IR 355RU) Main Unit

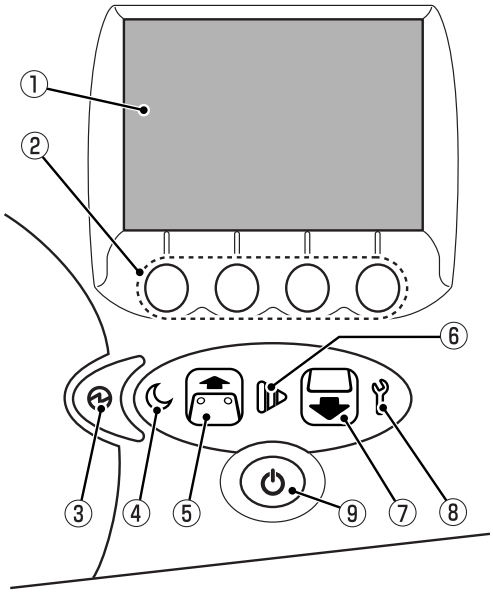


Name	Function
① Operation Panel	Operation panel for the FCR XC-1 (CR-IR 355RU).
② Cassette Set Unit with Dust-proof Cover	Used for inserting cassette that contains an exposed IP. Dust-proof cover is provided on this unit.
③ Main Power Switch	Leave it turned ON. ON (**I**) : Main Power ON OFF (**O**) : Main Power OFF
④ Power Plug	Power plug for this equipment.
⑤ External Device Connector (I/F Cable)	Used for network-connecting the external device.

CAUTION

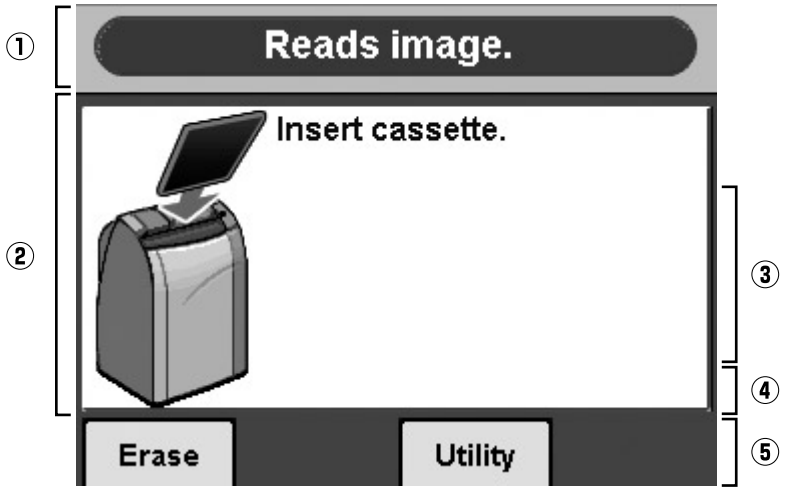
Do not connect telephone lines to LAN connector.
Only the IEC950/UL1950 standard non-shielded cables are appropriate for connection to this connector.

2.2.2 Operation Panel



	Name		Function
①	Display Screen		Displays operation messages, equipment statuses, and others. The basic screen is shown on page **2-6**.
②	Menu Selection Buttons		When a selection menu appears on the screen, each of the buttons selects/performs the function assigned to it when pressed.
③	POWER Lamp		Lights up (green) when the main power switch is pressed toward "**I**" and the power to the FCR XC-1 (CR-IR 355RU) turns ON. If the power ON/OFF control of the FCR XC-1 (CR-IR 355RU) is ganged with the console power, the main power switch is usually kept ON and thus the POWER lamp stays illuminated.
④	Power Save Lamp		Blinks when the panel backlight is in OFF status.
⑤	Cassette Ready Lamp		Lights up (green) when the FCR XC-1 (CR-IR 355RU) has started up normally, indicating that a cassette can be inserted. When this lamp is out, no cassette insertion is possible. For details, see page **2-8**.
⑥	Cassette Processing Lamp		Indicates the status of cassette processing. ON (green) : When the cassette has been correctly inserted. Flashing (green) : When image erasure is complete. OFF : When the IP has been returned into the cassette. For details, see page **2-8**.
⑦	Cassette Removal Lamp		Flashes (blue) when the processed cassette becomes ready for removal. When the cassette is removed, the lamp goes out. For details, see page **2-8**.
⑧	CALL Lamp		Flashes (yellow) if some sort of error occurs. Depending on settings, an alarm may also sound to alert you to the occurrence of the error. Handle the error in accordance with the message displayed on the screen. When the error has been resolved, the lamp goes off.
⑨	Power ON Switch		Turns on/off the power to the FCR XC-1 (CR-IR 355RU). This button is used when the FCR XC-1 (CR-IR 355RU) is started up singly.

2.2.3 Display



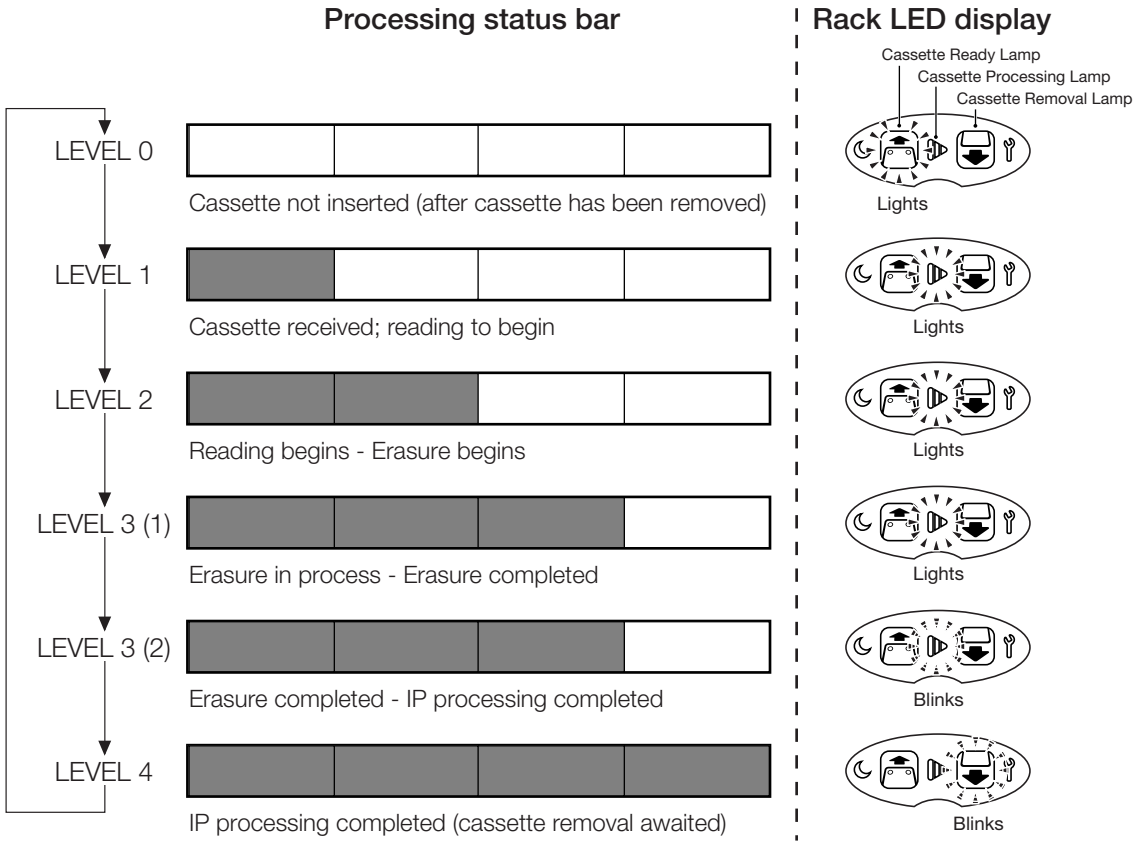
Name	Function
① Title/Message Display Field	Displays the title of the screen being shown along with an operation message.
② Message Display Field	Displays the system message.
③ Patient information/Exposure Information Display Field	Displays patient information and an exposure menu.
④ Cassette Processing Status Bar	Displays the status of processing operations being performed on the inserted cassette. For details, see page **2-8**.
⑤ Selection-menu Display Field	A menu of user-selectable options (buttons) are displayed. Pressing a menu-selection key executes the function assigned to that button.

■ Error Screen (Example)

	Name	Function
①	Title Display Field	Displays an error title.
②	Message Display Field	Displays a message prompting the user to perform an operation.
③	Selection-menu Display Field	A menu of user-selectable options (buttons) are displayed. Pressing a menu-selection key executes the function assigned to that button.

2.2.4 Processing Status Bar

The diagram below shows the processing status bar and lamp indication corresponding to reading status subsequent to cassette insertion.



Chapter 3

Basic Operation

Pages

3.1 Before Use 3-2
3.1.1 Performing Image Erasure 3-2
3.2 System Startup/Shutdown and Image Reading (CR Console) 3-3
3.2.1 Starting Up the System 3-3
3.2.2 Shutting Down the System 3-4
3.2.3 Reading Cassette Images 3-5
3.3 Starting Up/Shutting Down the FCR XC-1 Main Unit 3-6

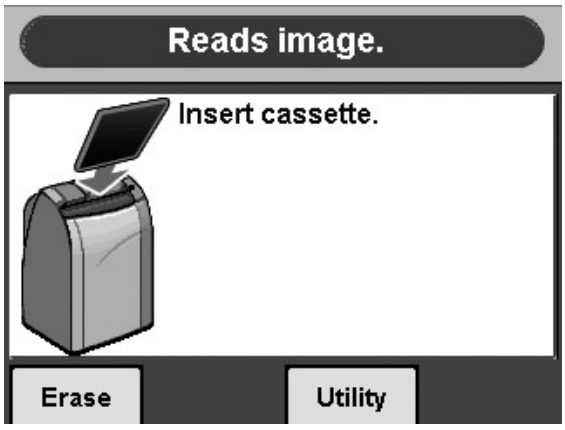
3.1 Before Use

If an IP needs to be erased without being subjected to scanning on account of a failed exposure or the like, perform “image erasure” on the IP. Furthermore, IPs that are going to be used for the first time on a given day, perform “image erasure” on them before use in order to prevent image degradation.

3.1.1 Performing Image Erasure

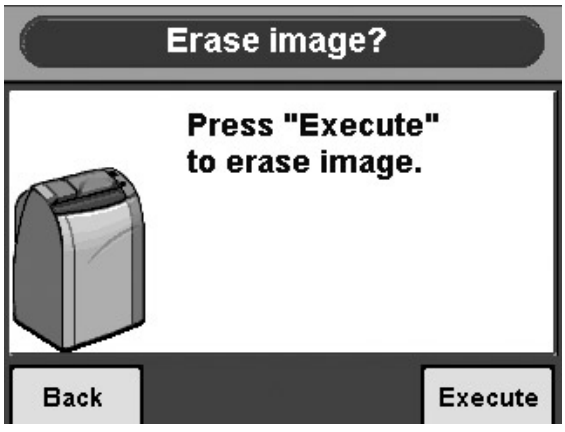
An “over-exposed” or “incorrectly exposed” IP should be subjected to “image erasure” without fail. In addition, if an IP that is going to be used for radiographing work has not been used yet on the day, it is necessary to perform image erasure on that IP.
The objective of the image erasure is to dissipate any excess energy the IP has accumulated, immediately before making a radiographic exposure. Even when the IP is stored in a room, it absorbs and accumulates natural radiation such as cosmic rays and radiation energy emanating from radioisotopes contained in construction materials such as those used for floors and walls. If such an energy-loaded IP is used as-is, image degradation may result. By using the following procedure, perform the erasure of the image on the IP.

1 **Press [Erase] on the “Initial screen.”**



The “Erase image?” window appears.

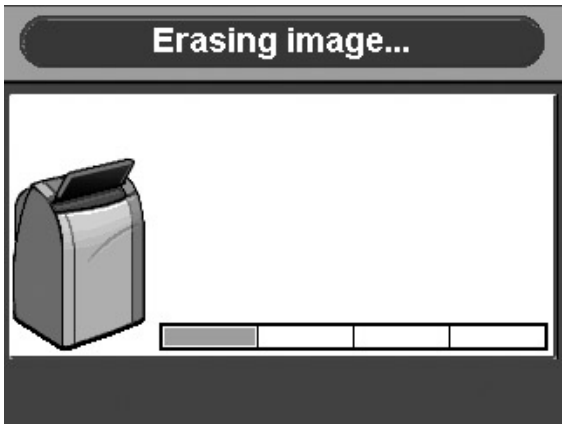
2 **Press the [Execute] button.**



A message will appear.

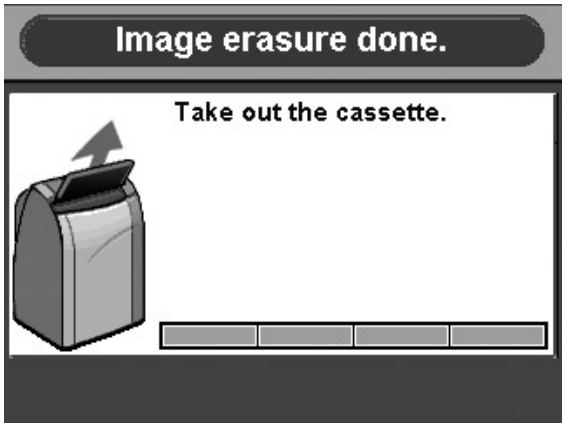
3 **Insert a cassette.**

Image erasure is performed.



Upon completion of the image erasure, a message will appear.

4 **Take the cassette out.**



The image erasure session is complete and it automatically return to the “Initial screen.”

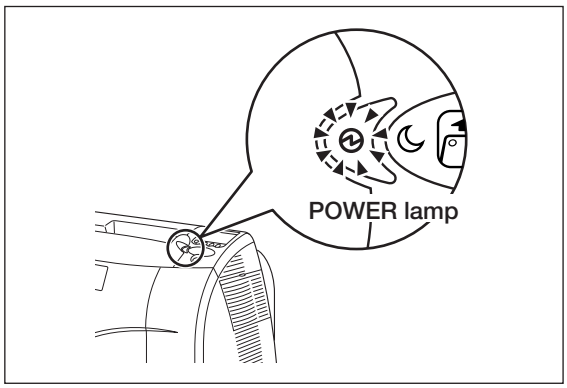
3.2 System Startup/Shutdown and Image Reading (CR Console)

The startup and shutdown of the FCR XC-1 (CR-IR 355RU) is performed under the control of the CR Console's power ON/OFF switch.
To start up only the FCR XC-1 (CR-IR 355RU), use the procedure described in [3.3 Starting Up/Shutting Down the FCR XC-1 Main Unit].
In sections coming hereafter where the system operation is explained, the "FCR XC-1 (CR-IR 355RU)" is expressed simply as "FCR XC-1."

3.2.1 Starting Up the System

1 Confirm that the POWER lamp on the FCR XC-1's operation panel is on.

If the POWER lamp is not lit, turn the Power ON Switch.



2 Firstly, press the power ON/OFF switch of the console's monitor, and secondly press the power ON/OFF switch of the console itself.

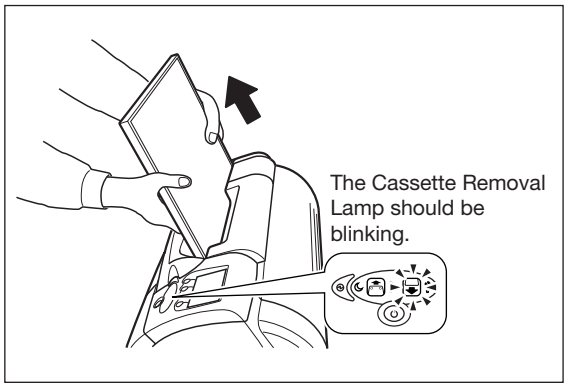
CAUTION

Turn ON the monitor ahead of the console itself. If you do it the other way round, the touch panel may not respond.
You are, therefore, recommended to keep the monitor ON during the day.

The console's application software starts.
When the console starts, the "Patient Information Input" window appears.

3.2.2 Shutting Down the System

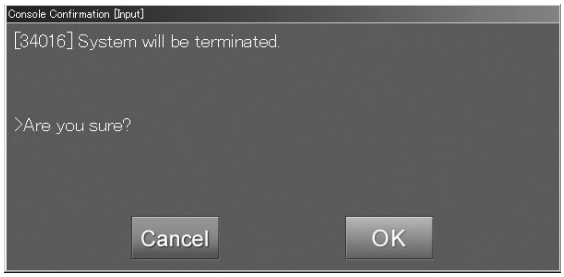
1 **After making certain that the FCR XC-1 has finished reading the cassette, take the cassette out.**



If a cassette remains inserted in the cassette set unit, remove the cassette.

2 **On a screen from which the console can be shut down, select [Shut Down].**

3 **The following dialog appears. Press [OK].**



The system is turned OFF automatically.

4 **Turn the monitor OFF.**

HINT

For the operation of the CR Console and the User Utility, refer to the appropriate sections of the "**CR Console Operation Manual**," the "**CR Console Operation Guide**," and "**CR Console Operation Manual — The User Utility Operations**."

3.2.3 Reading Cassette Images

CAUTION

Before using a cassette, ensure that it is applicable to the Image Reader.
Using a cassette not applicable to the Image Reader will disable image reading on it.

Before reading a cassette IP image, register patient information and study menus on the Console for the purpose of X-raying the patient.
Described herein is the procedure covering steps up to reading exposed images.

1 **Input patient information and then select study menus and exposure menus. (CR Console)**

For details on how to register patient information and operate study menus on the CR Console, refer to the appropriate sections of the "**CR Console Operation Manual**," "**CR Console Operation Guide**" and "**CR Console Operation Manual — The User Utility Operations**."

2 **Subject a patient to X-ray exposure.**

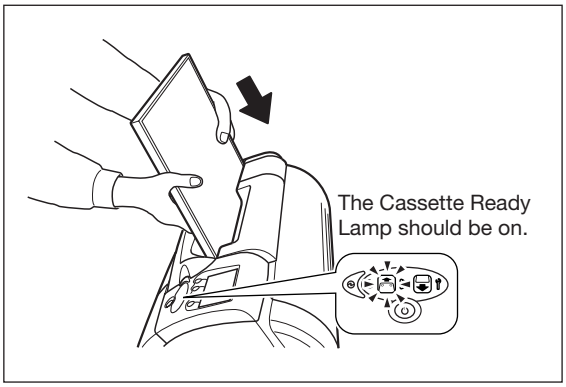
3 **Read the exposed image. (FCR XC-1)**

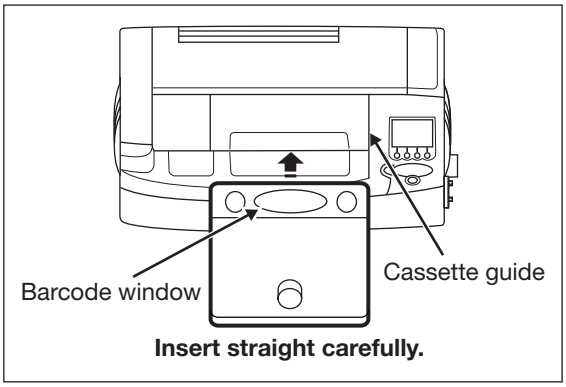
Explained below is the procedure to read images of a cassette inserted into the FCR XC-1.

1. **Confirm that the Cassette Ready Lamp is lit (green) on the operation panel.**

2. **Insert a cassette into the equipment in alignment with the guide on the right, with the cassette's barcode window facing as illustrated below.**

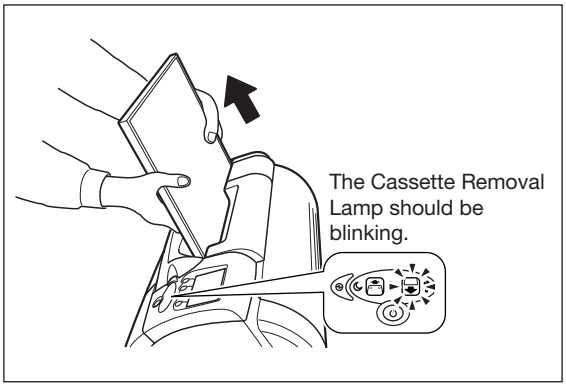
- Remove the exposure marker from the cassette before inserting the cassette in the Image Reader.
- Insert the cassette in the Image Reader after confirming the sides and the direction of the cassette. Moreover, insert the cassette straight and slowly.
  If a cassette is inserted incorrectly wrong side or direction, like at a slant, the Image Reader can be damaged.
- Do not shake the Image Reader or the cassette while reading the image.
  Such as uneven image, which will prevent image reading, might be generated.
- After inserted a cassette into the Image Reader, do not touch the cassette until the Cassette Removal Lamp lights.
  Touching an inserted cassette while image reading may cause the Image Reader failure.





Insert straight carefully.

3. **Confirm that the Cassette Removal Lamp is blinking (blue) on the operation panel and then remove the cassette.**

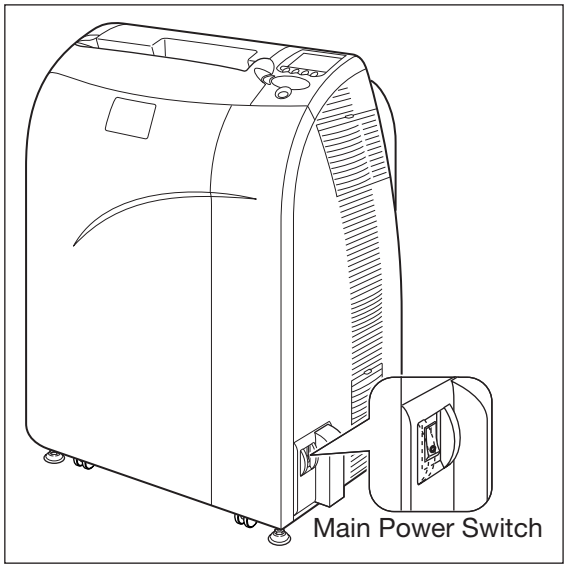


3.3 Starting Up/Shutting Down the FCR XC-1 Main Unit

This section explains how to start up/shut down the FCR XC-1 main unit.
To operate the CR Console, use the procedure described in "3.2.1 Starting Up the System."

1 **Ensure that the Main Power Switch of the FCR XC-1 has been turned ON.**

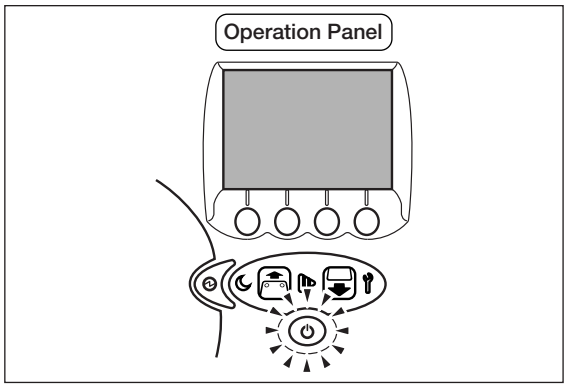
If the Main Power Switch has not been turned ON, turn it ON accordingly.



To start up the FCR XC-1 main unit

2 **Turn ON the power to the FCR XC-1.**

Press the POWER ON Switch on the operation panel to turn the power ON.

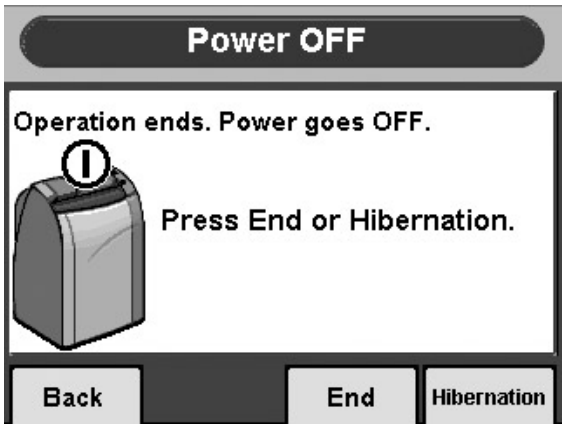


The FCR XC-1 will then start up.

To shut down the FCR XC-1 main unit

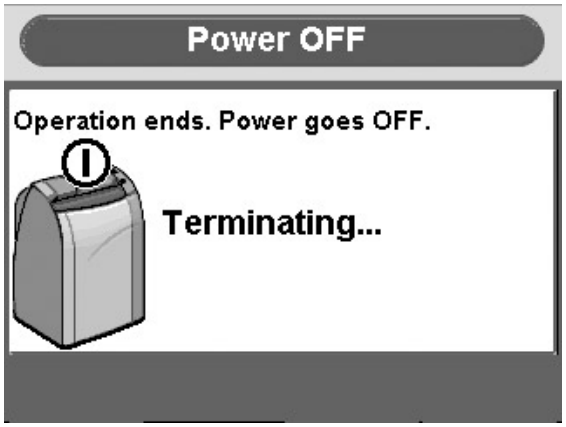
2 **Turn OFF the power to the FCR XC-1.**

Hold down the POWER ON Switch on the operation panel until the window below opens.



The "Power OFF" window is displayed and the Cassette Ready Lamp lights on the operation panel.

3 **Press the [End] button.**



The window then closes.
(Note that the POWER Lamp remains lit.)

HINT

If you select [Hibernation], the equipment will go into hibernation. This is the same status as the power has been turned OFF.

Chapter 4

Utility

Pages

4.1 Starting Up and Quitting the Utility ____ 4-2

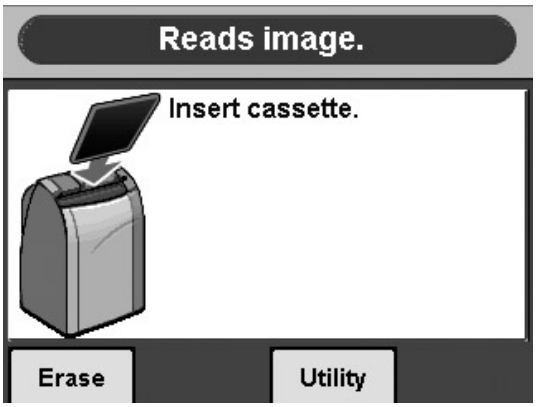
4.2 Cleaning the Scanner ____ 4-3

4.1 Starting Up and Quitting the Utility

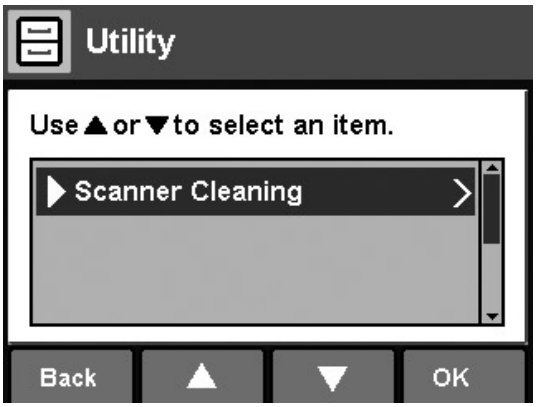
Described herein is the procedure used to start/quit the utility for the FCR XC-1.

Starting Up the Utility

1 On the “Initial screen” press the [**Utility**] button.

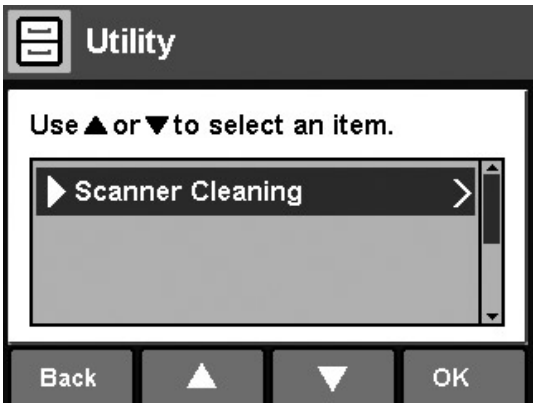


The utility starts up and the “Utility TOP” window opens.



Quitting the Utility

1 On the “Utility TOP” window press the [**Back**] button.

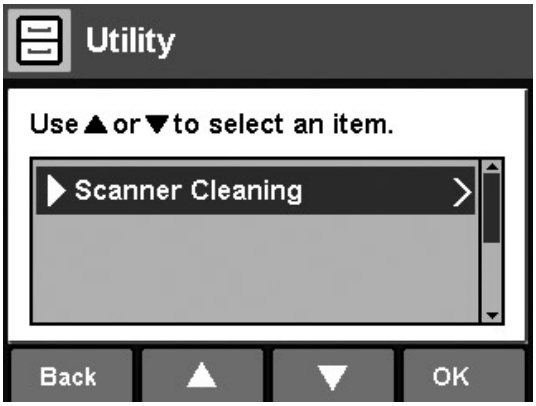


The utility quits and it automatically return to the “Initial screen.”

4.2 Cleaning the Scanner

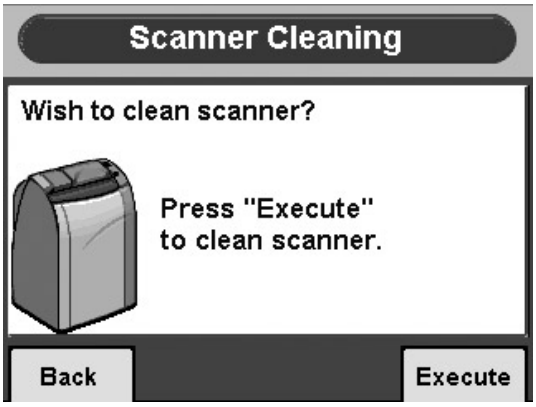
You can clean the FCR XC-1's built-in scanner.

1 On the "Utility TOP" window, select [**Scanner Cleaning**] and press the [**OK**] button.



The "Scanner Cleaning" window appears.

2 Press the [**Execute**] button.



The cleaning of the scanner begins.

HINT

To cancel scanner cleaning and return to the "Utility TOP" window, press the [**Back**] button.

3 When the scanner cleaning completion appears, press the [**Confirm**] button.

It automatically return to the "Utility TOP" window.

Chapter 5

Troubleshooting

Pages

5.1 Troubleshooting ____ 5-2
5.2 If the FCR XC-1 Cannot be Powered ON ____ 5-3
5.3 If the FCR XC-1 Cannot be Powered OFF ____ 5-4
5.4 When An Error Message Appears ____ 5-5
5.5 When Image Is Streaked ____ 5-9

5.1 Troubleshooting

When the equipment does not operate normally, see the relevant page for you to take necessary actions appropriately, according to the symptom shown below.
In case you encounter any trouble you cannot handle, please contact your local authorized distributor.

In Case a Problem May Arise

- If the FCR XC-1 Cannot be Powered ON ---- Page 5-3
- If the FCR XC-1 Cannot be Powered OFF ---- Page 5-4
- When An Error Message Appears ---- Page 5-5
- When Image Is Streaked ---- Page 5-9

5.2 If the FCR XC-1 Cannot be Powered ON

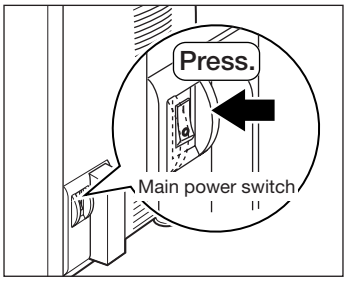
If the FCR XC-1 cannot be powered ON even when you have pressed the POWER button, please make the following checks:

The Main Power Switch has been turned OFF.

☞ Set the Main Power Switch to the "**I**" side to turn it ON.

HINT

When AC mains power is being applied to the FCR XC-1, the POWER lamp on the operation panel illuminates green.

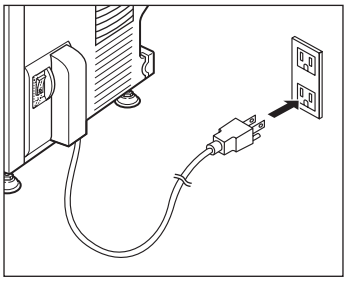


The power cord has been disconnected.

☞ Turn OFF the main power switch (by setting it to the "**O**" position), securely plug the AC cord into a wall outlet and turn the main power switch ON (by setting it to the "**I**" position).

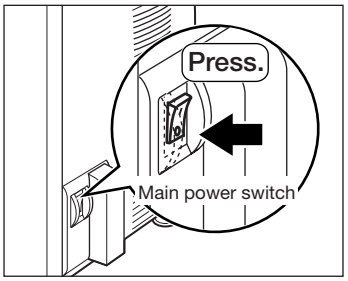
HINT

When AC mains power is being applied to the FCR XC-1, the POWER lamp on the operation panel illuminates green.



5.3 If the FCR XC-1 Cannot be Powered OFF

If the FCR XC-1 cannot be powered off even when you have performed normal shutdown procedures, please make the following checks:

Isn't there any yet-to-be-transmitted image still remaining in the FCR XC-1?	☞ Shut down the FCR XC-1 after transmitting any remaining image.	
More than five minutes have passed since the [Shutdown] button had been pressed.	☞ Turn OFF (press to the "**O**" side) the Main Power Switch at the bottom right-side corner on the front of the equipment.	

5.4 When An Error Message Appears

This section provides a listing of error messages that can appear on the screen of the FCR XC-1 along with their meanings and examples of ways of dealing with them. Should you encounter any trouble you cannot handle, contact your local authorized distributor.

An example of an error-message screen and a description of each display area are given below:

■ Example of an error-message screen

	Name	Description
①	Title Display Field	The title of an error is displayed.
②	Message Display Field	An error code and a corresponding message prompting user action are displayed.
③	Selection-menu Display Field	A menu of user-selectable options (buttons) are displayed. Pressing a menu-selection key executes the function assigned to that button.

Here is the list of error codes:

Error code	Message title	Description	Corrective action
11200	HV-OFF	Since the HV SW for the photomultiplier is faulty, image scanning cannot be performed.	Contact your local authorized distributor.
11273 11906	Laser power low	The image reading unit's laser power has come down.	Contact your local authorized distributor.
11287	Image signal error	Image signal cable connection may be faulty.	Contact your local authorized distributor.
11373 11374 11375 11377 11378 11381 11951	Cassette misinserted	Cassette may be inserted improperly in terms of position.	Press "Eject" to take the cassette out first, and then correctly insert it again.
11379	Can't unlock cassette	Since cassette is improperly inserted in terms of position, lock cannot be undone.	While pushing the cassette toward the far right side, press "Unlock."
11382	Wrong type cassette	Cassette of this type is not supported.	Press "Eject." Scan the removed cassette using an image reader that is compatible with that cassette.
11389 11390 11396 11397 11413 11414 11465 11466 11510	Unread IP ejected	IP failed to be read.	Press "Eject." Insert the removed cassette again to have the IP scanned.
11398	Out-of-spec IP size	IP of this size is not supported.	Press "Eject." After removal, scan the removed cassette using an image reader that is compatible with that cassette.
11453	Wrong cassette size	Cassette of this size is not supported.	Press "Eject." After removal, insert again a cassette of the size specified by the message.
11454 11950	Cassette eject request	Cassette cannot be inserted.	Remove the cassette.
11489	Scanner fan failure	Cooling fan is faulty. The cooling fan needs replacing as soon as possible.	Contact your local authorized distributor.
11498	Load empty cassette	IP remains sitting inside the FCR XC-1.	Insert a cassette of the size specified by the message.
11511	PatientInfo unregistered	Patient information is not registered yet.	Remove the cassette. Register patient information from the console and then insert the cassette again to have the image scanned.

Error code	Message title	Description	Corrective action
11530	Resend image	Since image could not be transmitted, a resend is attempted.	Check the conditions of the console, connections cables, and hub.
11531	Image send failure	Image could not be sent.	Press “Eject” and remove the cassette.
11700	Dead erase lamp	Since some erasing lamp(s) is dead, image erasure time is extended. The erasing lamps need inspection as soon as possible.	Contact your local authorized distributor.
11701	Erase incomplete	Since erasing lamps are dead, image erasure is not possible. Erasing lamps need replacing.	Contact your local authorized distributor.
11702	Replace erase lamp	Erasing lamps need replacing.	Contact your local authorized distributor.
11703	Life end. Long erasure	Due to the end-of-life of erasing lamps, the image erasure time is extended. Lamp changing should be done as soon as possible.	Contact your local authorized distributor.
11704	Life end. Poor erasure	Because of the end-of-life of erasing lamps, image cannot be erased. The erasing lamps need replacing.	Contact your local authorized distributor.
11710	Erase-lamp temp. sensor fail	Since temperature sensor is faulty, image cannot be erased. The temperature sensor needs replacing.	Contact your local authorized distributor.
11720	Failed cooling fan	Since cooling fan for erasing lamps is faulty, image cannot be erased. The cooling fan needs replacing.	Contact your local authorized distributor.
11760	IP erase incomplete	Image on IP is not completely erased.	Press “Eject.” Remove the cassette once, insert it again, and then erase the image.
11901	Worn air filter	Air filter is worn and needs replacing as soon as possible.	Contact your local authorized distributor.
11902	Worn brush roller	Brush roller is worn and needs replacing as soon as possible.	Contact your local authorized distributor.
11903	Worn damper	Damper is worn and needs replacing as soon as possible.	Contact your local authorized distributor.
11904	Worn erasure lamp & filter	Lamp filter is worn and needs replacing as soon as possible.	Contact your local authorized distributor.
11905	Worn pump	Pump is worn and needs replacing as soon as possible.	Contact your local authorized distributor.
11907	Maintenance data saving failure	Information for maintenance checkup purposes cannot be collected.	Start up the console that is connected to the FCR XC-1.

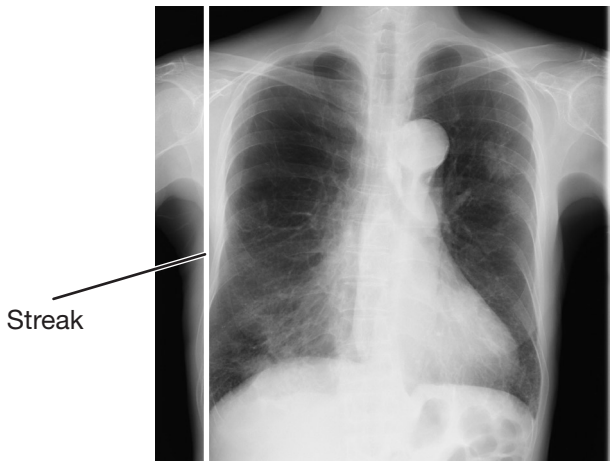
Error code	Message title	Description	Corrective action
11960	**Over X-ray. Poor erasure**	Image on IP has not been erased completely (because of an excessive amount of X-rays).	Press “ReErase.” Note that it takes a lot of time to achieve erasure. If you want to perform erasure later on, press “Eject.”
11970	**Unprocessed IP**	There is a possibility that image still remains on the IP.	Press “Eject.” Remove the cassette, insert it again, and then erase the image.
11971	**Unerased IP**	There is a possibility that image still remains on the IP.	Press “Eject.” Remove the cassette, insert it again, and then erase the image.
10xxx*	**SysDown**	Since an error has occurred, the system will be shut down.	Turn OFF the main power switch, and start again.
11908 11909	**Read sensitivity low**	Equipment sensitivity needs to be adjusted.	Contact your local authorized distributor.
—	**Connection failure**	Cannot connect with Console	Check the conditions of the Console, connections cables, and hub.
—	**Disconnected**	Disconnected from Console	Check the conditions of the Console, connections cables, and hub.
—	**Can’t power off**	Cannot turn off power because of ongoing processing.	Wait until processing is complete, and then perform termination procedure.

* The xxx portion varies depending on the error encountered.

5.5 When Image Is Streaked

This section provides an example of a streaked image scanned with the FCR XC-1 and an explanation of how to fix the streaking problem.

If there is soil on the scanner, an IP or both of them, a scanned image may be streaked as shown below.



Note that the streak on this example is enhanced for the sake of clarity.

■ Remedial method

- **Scanner cleaning**
  Perform the cleaning of the scanner using the Utility.
  For how to clean the scanner, see the applicable section in Chapter 4.

- **Clean the IP.**
  Wipe the surface of the IP with a soft, dry cloth.
  If the soil fails to come off by dry wiping, wipe the surface using a small amount of dehydrated ethanol.
  Completely dry the IP surface before use.

CAUTION

- **Exercise due caution not to damage IPs.**
- **Never use plastic erasers and other solvents.**
- **Do not dig your finger nails into IP surfaces.**
- **Pay due attention not to use a large amount of dehydrated ethanol or clean the IP too frequently, otherwise the IP edges may turn yellowish.**

For IP cleaning, refer to "**B.2 Handling, Daily Care, and Storage of IPs**."

Chapter 6

Care and Maintenance

Pages

6.1 About Performing Daily Checks and Maintenance ____ 6-2
6.2 Cleaning the Cassette Set Unit ____ 6-3
6.3 Cleaning the Air Intakes and Exhaust Ports ____ 6-4
6.4 Users Checksheet ____ 6-5

6.1 About Performing Daily Checks and Maintenance

In order to use the FCR XC-1 always in good working order, perform daily checks and maintenance on it.

As for the daily checks, make certain that the FCR XC-1 starts up normally and all equipment that is connected to the FCR XC-1 can communicate normally with the FCR XC-1. For daily care, clean the cassette set unit and air intakes and exhaust ports everyday.

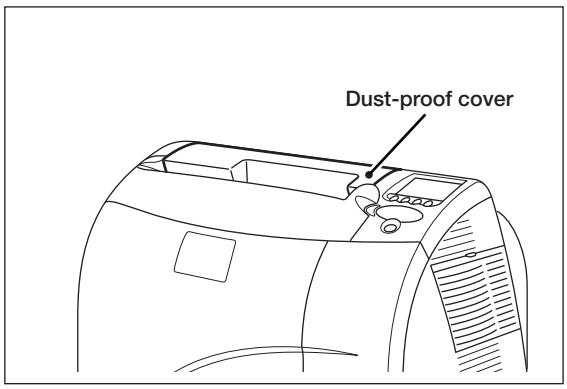
Use the “Users Checksheet” when performing daily checks and maintenance. Enter the following items of information into the “Users Checksheet”:

- Checkups : Enter the date checks were performed.
- S value confirmation : Enter the date the S value was checked.
- Cassette set unit : Enter the date the cassette set unit was cleaned.
- Air intakes and exhaust ports : Enter the date the air intakes and exhaust ports were replaced.

6.2 Cleaning the Cassette Set Unit

Perform cleaning, taking care not to let dust into the FCR XC-1.

1 Clean the dust-proof cover with a soft cloth moistened with water or the like.



CAUTION

Do not use chemicals such as alcohol and paint thinner since they may cause deformation of the dust cover.

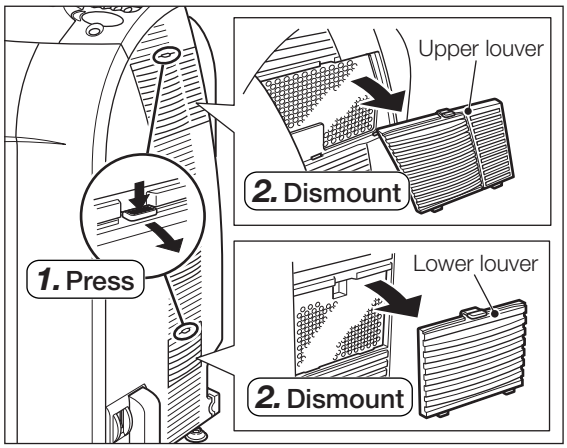
CAUTION

When cleaning, be careful not to get your fingers pinched by the dust-proof cover.

6.3 Cleaning the Air Intakes and Exhaust Ports

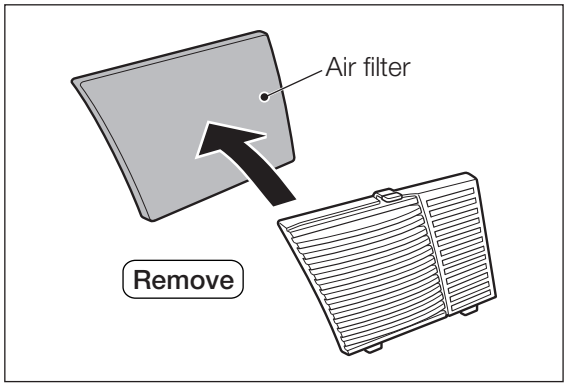
Clean air filter, louvers and air intakes of the right-side cover and the exhaust ports of the left-side cover periodically (once every three months).

1 **Press the button on the top of the louver of the right side (air intake) (*1.*) and dismount the louver (*2.*).**



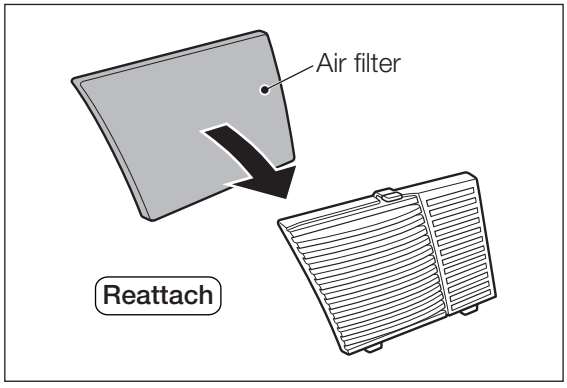
2 **Remove air filter attached to the inside of the upper louver.**

No air filter is attached to the inside of the lower louver.

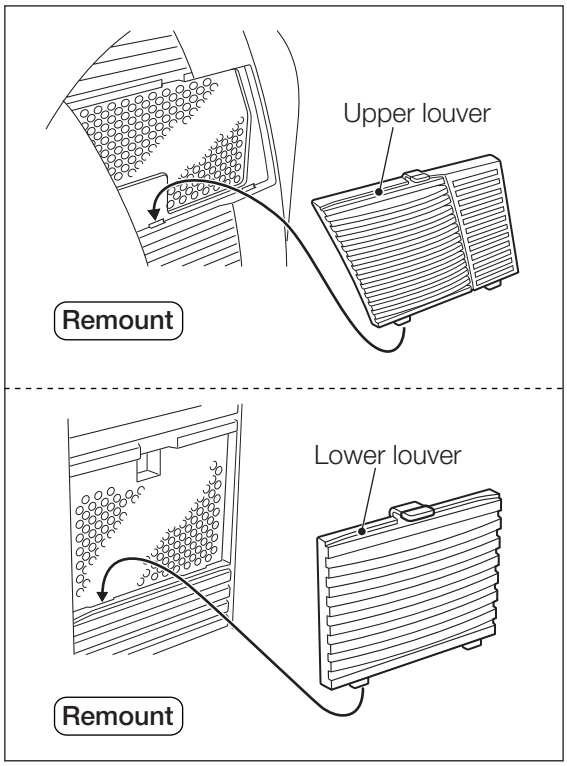


3 **Use a vacuum cleaner to clean the front and back of the air filter, louvers and air intakes.**

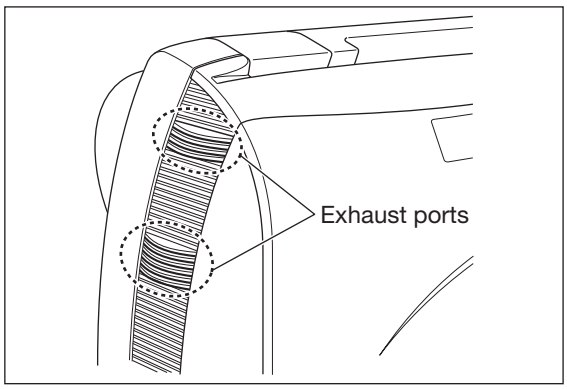
4 **Reattach the air filter to the upper louver.**



5 **Remount the louvers on the equipment.**



6 **Use a vacuum cleaner to clean the exhaust ports of the left side.**



⚠ CAUTION

When remounting the louver, be careful not to pinch your fingers.

6.4 Users Checksheet

We recommend that you periodically check the following so that you can optimally operate the equipment constantly. Make a copy when you are using this checksheet.

● **Verification**

Details	Frequency	Date of verification
Does the equipment start up normally?	Daily	／ ／ ／ ／ ／
Is the communication possible normally with the connected equipment?	Daily	／ ／ ／ ／ ／
Does the S value remain constant?	Every six months	／

● **Cleaning**

Unit for cleaning	Frequency	Date of cleaning
Cassette set unit	Every three months	／ ／ ／ ／ ／
Air intakes and exhaust ports	Every three months	／ ／ ／ ／ ／

Appendix A

Specifications

Pages

A.1 Specifications — **A-2**

A.1.1 Details of Equipment Specifications — **A-2**

A.1.2 Operating Performance — **A-3**

(1) Processing capacity — **A-3**

(2) Time required for monitor image display — **A-3**

(3) Time required for generating film prints — **A-3**

(4) Required specifications and other — **A-3**

A.1.3 Applicable Safety Standard — **A-4**

A.2 External View and Weight — **A-5**

A.1 Specifications

A.1.1 Details of Equipment Specifications

Standard Components
FCR XC-1 (CR-IR 355RU)

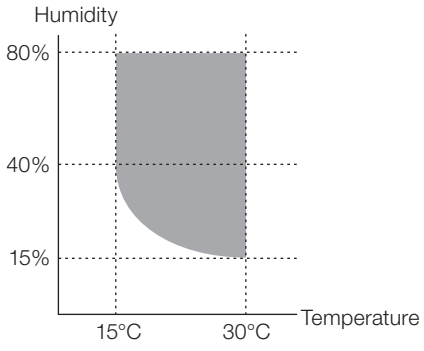
Power Supply Conditions

Input voltage	: AC 100-240V	Rated current	: 5A
Frequency	: 50-60Hz	Allowable variations in voltage	: ±10%
Phase	: Single		

Environmental Conditions

(1) Operating conditions
Temperature : 15 ˚C (40%) - 30 ˚C (80%)
Humidity : 15%RH (30 ˚C) - 80%RH (30 ˚C)
(no dew condensation)
Atmospheric pressure : 750-1060hPa

(2) Non-operating conditions
Temperature : 0 ˚C - 45 ˚C (no freeze condensation)
Humidity : 10%RH - 90%RH (no dew condensation)
Atmospheric pressure : 750-1060hPa



Available IP/Cassette

(1) FujiFilm IP
Used for ST-VI and ST-VN
14"×17" (35×43cm), 14"×14" (35×35cm), 10"×12" (25.2×30.3cm), 8"×10" (20.1×25.2cm), 24×30cm, 18×24cm

(2) Cassette
FujiFilm IP Cassette CC (ST type cassette)
14"×17" (35×43cm), 14"×14" (35×35cm), 10"×12" (25.2×30.3cm), 8"×10" (20.1×25.2cm), 24×30cm, 18×24cm

FujiFilm IP Cassette LC (for long-view exposure)
14"×17" (double), 14"×17" (triple), 10"×12" (double), 14"×14" (triple), 24×30cm (double)

* It is not allowed to use both the inch size and metric size at the same time. Select either at installation.

Options
Table, metal fixture kit for preventing the equipment from being toppled over, and cassette pocket.

A.1.2 Operating Performance

(1) Processing capacity

IP size / Processing type	14"×17"	14"×14"	10"×12"	8"×10"	24×30cm	18×24cm
Throughput (Unit : Min. number of processable IPs/hr.)	35	40	45	56	45	60
Feed/load time (Unit : Max. time in seconds)	101	88	80	64	79	60

- If the maximum dose applied on the IP exceeds 40mR (1 [mR] ≈ 8.7 [μGy]), the cycle time increases as the X-ray dose increases.
- The time required for changing the cassette is assumed 0 seconds.
- The erasure time is based on 25mR of X-ray dose (1 [mR] ≈ 8.7 [μGy]) applied at exposures.
- The ST-VI type IP is used (the erasure time is extended for the ST-VN type IP).

(2) Time required for monitor image display

Time required for an image to be displayed on the monitor after the cassette has been inserted.

(Unit : Max. time in seconds)

Time required for monitor image display (for each image reading size) / Monitor	14"×17"	14"×14"	10"×12"	8"×10"	24×30cm	18×24cm
CR Console	52	46	41	33	41	31

(3) Time required for generating film prints

(Unit : Max. time in seconds)

Printer (printout on a 14"×17" film) / Console	DRYPIX 7000		DRYPIX 4000	
	14"×17" IP	14"×14" IP	14"×17" IP	14"×14" IP
CR Console	135	130	155	145

* For one-image printout.

(4) Required specifications and other

Basic requirement for the CR

Noise (DQE) : Should be within the range specified below.
Between 19.8% and 11.6% at 1cy/mm (258nC/kg of X-rays)
* The guaranteed initial center value is 17.0% for the six years of the equipment's effective life time.

Sharpness (MTF) : Should be within the range specified below.
Between 66.2% and 54.2% at 1cy/mm (825.6nC/kg of X-rays)
* The guaranteed initial center value is 60.0% for the six years of the equipment's effective life time.

Artifact : Should be free of image unevenness that may affect the diagnosis.

A.1.3 Applicable Safety Standard

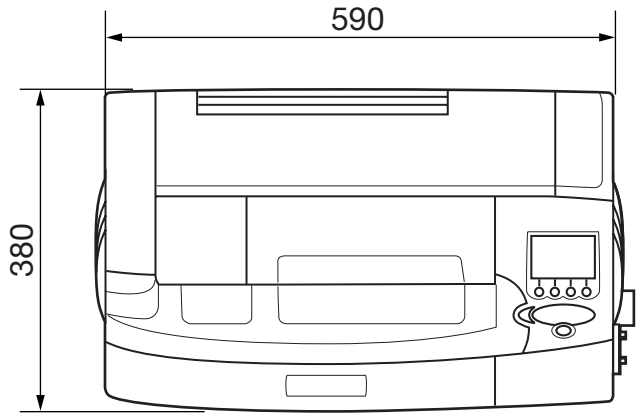
Number/year of the standard	Title
IEC 60825-1 Ed. 1. 2 : 2001	Safety of laser products - Part 1 : Equipment classification, requirements and user's guide
EN 60825-1 Ed. 1. 2 : 2002	Safety of laser products - Part 1 : Equipment classification, requirements and user's guide

A.2 External View and Weight

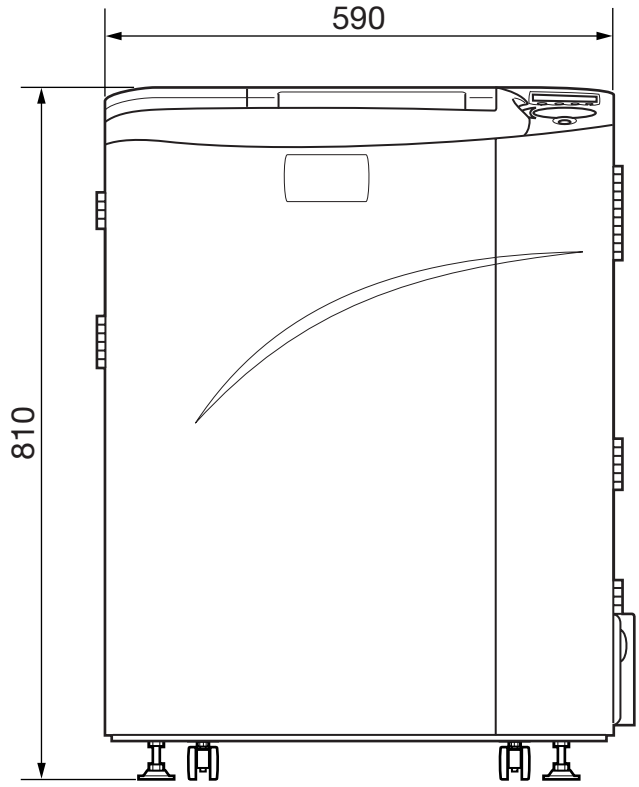
Model Name	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
FCR XC-1 (CR-IR 355RU)	590	380	810	98

* Dimensions: Projections are not included.

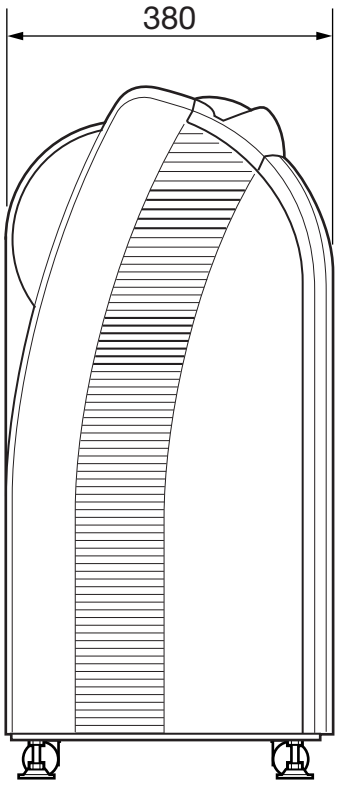
(Unit : mm)



<Top view>



<Front view>



<Left-side view>

Specifications, external dimensions and weight are subject to change for improvement without prior notice.

Appendix B

IP Handling

Pages

1. IP Image Erasure Operation ____ B-2
2. Handling, Daily Care, and Storage of IPs ____ B-3

B

1. IP Image Erasure Operation

If an IP needs to be erased without being subjected to scanning on account of a failed exposure or the like, perform "image erasure" on the IP. Furthermore, IPs that are going to be used for the first time on a given day, perform "image erasure" on them before use in order to prevent image degradation.
For details of image erasure, see "3.1.1 Performing Image Erasure."

Primary erasure

An "over-exposed" or "incorrectly exposed" IP should be subjected to "image erasure" without fail.
In addition, if an IP that is going to be used for radiographing work has not been used yet on the day, it is necessary to perform image erasure on that IP. The objective of the image erasure is to dissipate any excess energy the IP has accumulated, immediately before making a radiographic exposure. Even when the IP is stored in a room, it absorbs and accumulates natural radiation such as cosmic rays and radiation energy emanating from radioisotopes contained in construction materials such as those used for floors and walls. If such an energy-loaded IP is used as-is, image degradation may result.

2. Handling, Daily Care, and Storage of IPs

This section provides descriptions of important notes about the storage and daily handling of IPs and methods by which to clean them.

Storage conditions

- Store IPs under the following environmental conditions:
  Unopened : 35°C max.
  Opened : 33°C max., 80% RH
- IPs should be stored out of direct sunlight, ultraviolet rays, and various kinds of radiation.
- Do not bend or fold IPs, and do not apply strong force to them.

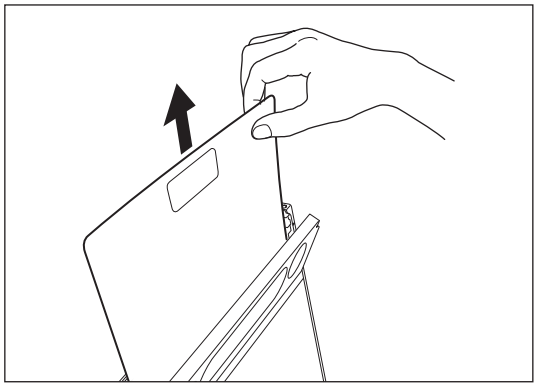
Everyday handling

- Do not use an IP bearing a flaw(s) which can interfere with diagnostic assessment.
- Handle IPs as gently and carefully as possible, taking care not to scratch and soil them.
- Do not bend IPs in small radii. Do not bump them against other objects. Do not drop them onto the floor or the top of a table.

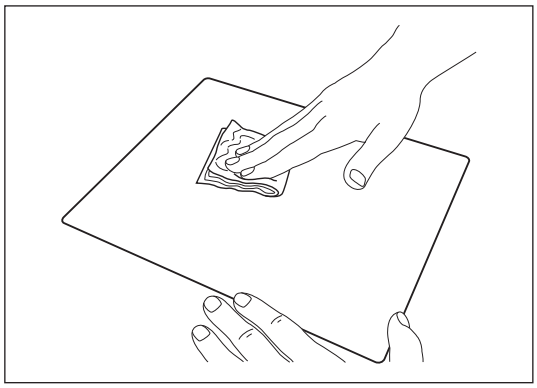
Cleaning methods

- Items to have ready
  IPs should be cleaned using limited-linting dry cloth. Use any of the following kinds of cloth:
  Non-woven cotton cloth
  Gauze (100% cotton)
  Lens cleaning cloth

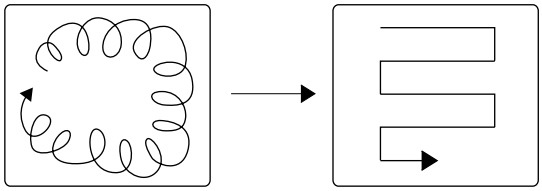
1 Remove the IP from the cassette.



2 Clean the IP as follows.



Using any of the above dry cloths, wipe the IP surface in the following patterns, A and B, in order:



A B

If there is soil that cannot be removed by dry wiping

1 If soil cannot be removed by dry wiping, moisten the cloth lightly with dehydrated ethanol. (Never use any other cleaning solvent.)

CAUTION

When dehydrated ethanol is frequently used for cleaning the IP, the edges of the IP may yellow.

2 After wet wiping, lightly wipe the IP with a soft dry cloth. The IP should be dried completely before use.

[NOTES]
- Exercise due caution not to damage IPs.
- Never use plastic erasers and other solvents.
- Do not dig your finger nails into IP surfaces.

CAUTION

Never expose an IP to light, which has been exposed but not scanned yet.

Appendix C

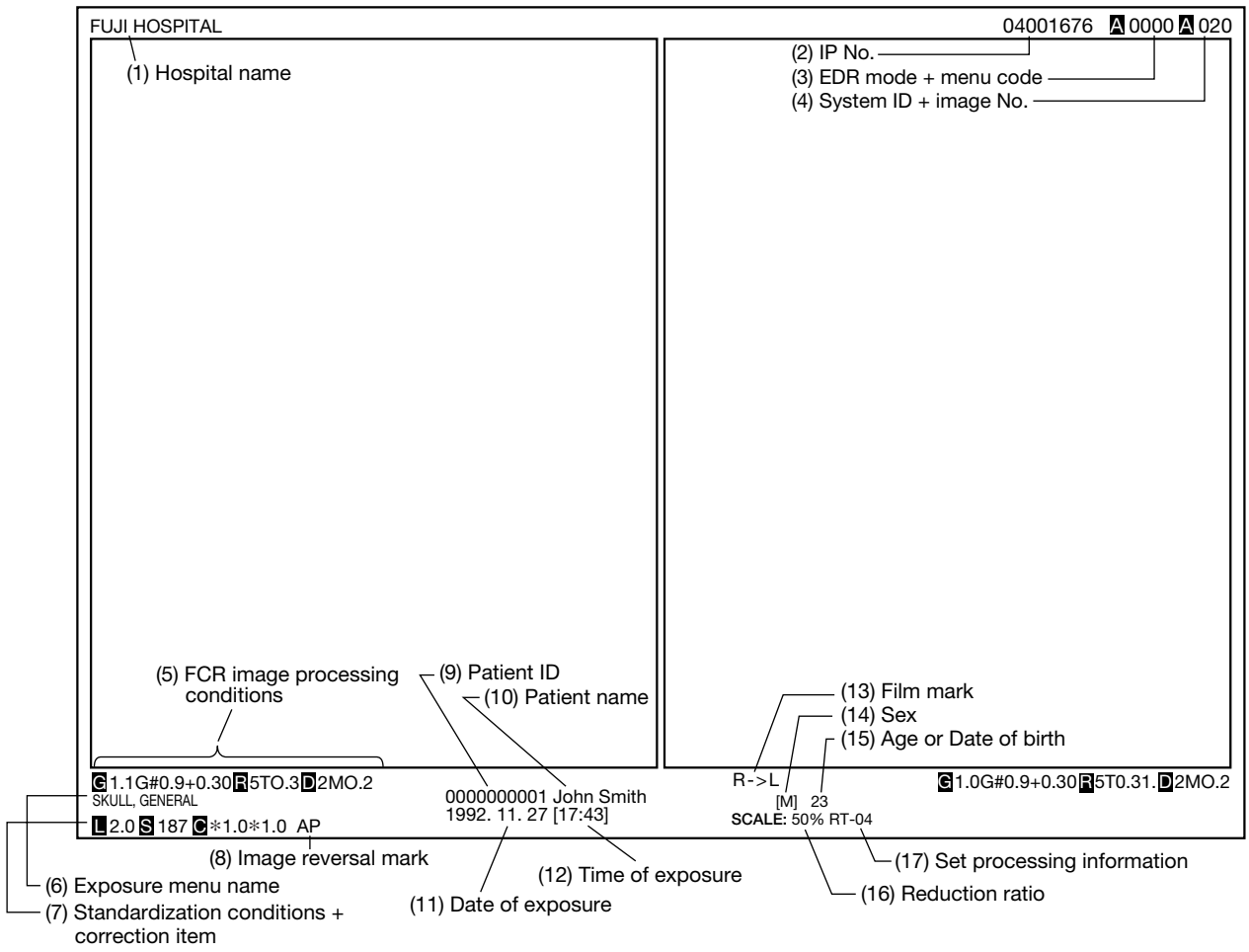
About Text Information Printed on Film

About Text Information Printed on Film

This section provides a description of information to be printed on film.

In the case of the two-image format

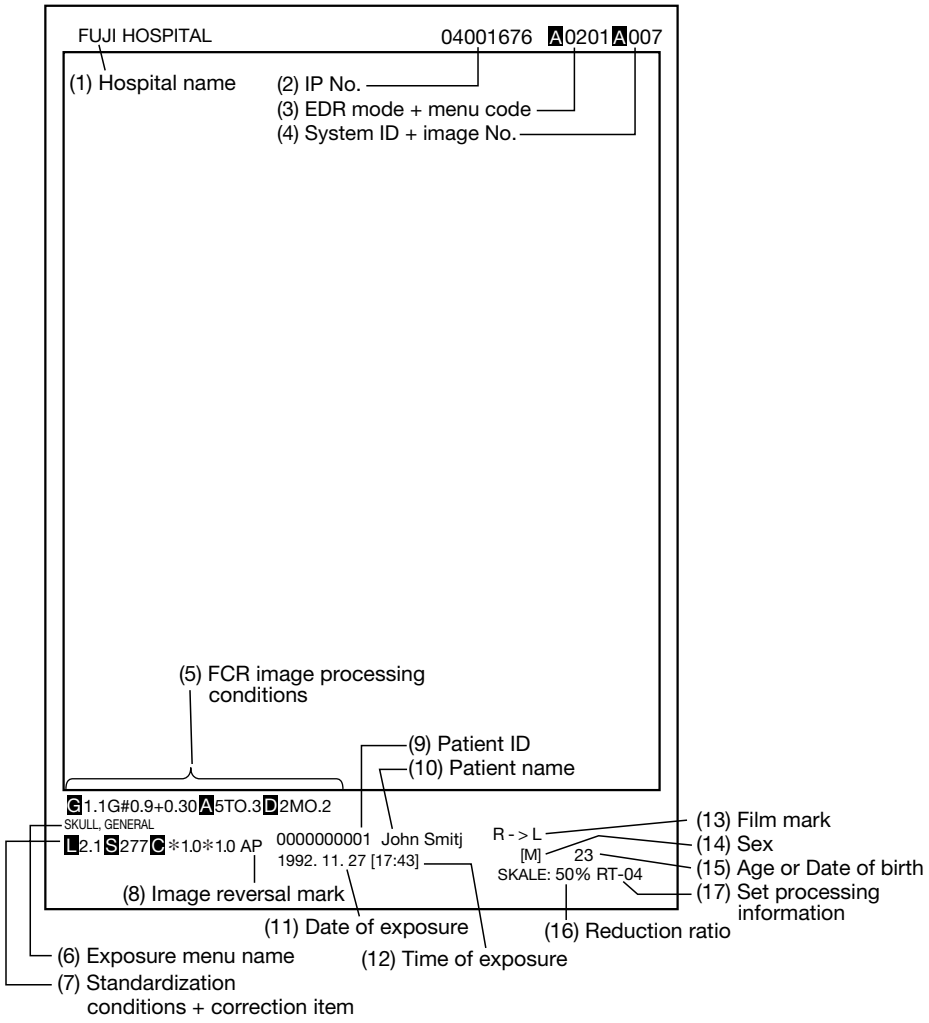
Shown below are an example of annotation printing in the two-image format and the meanings of the on-film annotations:



	Item	Description
(1)	Hospital name	The name of the hospital where the exposure was made is displayed.
(2)	IP No.	The barcode No. of the IP is displayed.
(3)	EDR mode + menu code	The EDR mode and the menu code are displayed. (* In the Standard Film Annotation, only the menu code is displayed.)
(4)	System ID + image No.	System ID: An image reader-specific ID code which is one of the characters A to Z and is displayed in reverse video. Image No. : A 3-digit consecutive ordinal number at which the image was scanned on the day is displayed.
(5)	FCR image processing conditions	Exposure menu-specific exposure conditions are displayed.
(6)	Exposure menu name	The name of the menu under which the exposure was made is displayed.
(7)	Standardization conditions + correction item	Latitude (L) and sensitivity (S) value data are displayed along with correction information (C).
(8)	Image reversal mark	Displayed when the image is reversed.
(9)	Patient ID	The ID of the patient exposed is displayed
(10)	Patient name	The name of the patient exposed is displayed.
(11)	Date of exposure	The date the exposure was made is displayed.
(12)	Time of exposure	The time of the day when the IP was registered is displayed.
(13)	Film mark	The orientation in which the exposure was made is displayed.
(14)	Sex	The sex of the patient exposed is displayed.
(15)	Age or Date of birth	The age of the patient when the exposure was made or his/her birth date is displayed.
(16)	Reduction ratio	The image's reduction ratio, from the life size on down, is displayed.
(17)	Set processing information	The image's batch processing information is displayed.

In the case of the one-image format

Shown below are an example of annotation printing in the one-image format and the meanings of the on-film annotations:



	Item	Description
(1)	Hospital name	The name of the hospital where the exposure was made is displayed.
(2)	IP No.	The barcode No. of the IP is displayed.
(3)	EDR mode + menu code	The EDR mode and the menu code are displayed. (* In the Standard Film Annotation, only the menu code is displayed.)
(4)	System ID + image No.	System ID: An image reader-specific ID code which is one of the characters A to Z and is displayed in reverse video. Image No. : A 3-digit consecutive ordinal number at which the image was scanned on the day is displayed.
(5)	FCR image processing conditions	Exposure menu-specific exposure conditions are displayed.
(6)	Exposure menu name	The name of the menu under which the exposure was made is displayed.
(7)	Standardization conditions + correction item	Latitude (L) and sensitivity (S) value data are displayed along with correction information (C).
(8)	Image reversal mark	Displayed when the image is reversed.
(9)	Patient ID	The ID of the patient exposed is displayed
(10)	Patient name	The name of the patient exposed is displayed.
(11)	Date of exposure	The date the exposure was made is displayed.
(12)	Time of exposure	The time of the day when the IP was registered is displayed.
(13)	Film mark	The orientation in which the exposure was made is displayed.
(14)	Sex	The sex of the patient exposed is displayed.
(15)	Age or Date of birth	The age of the patient when the exposure was made or his/her birth date is displayed.
(16)	Reduction ratio	The image's reduction ratio, from the life size on down, is displayed.
(17)	Set processing information	The image's batch processing information is displayed.

Appndix Y

Image Processing Parameters

Pages

YI Exposed Anatomical Regions/
Applicable Menus/Display Parameters ——— YI-1

YIV Flexible Noise Control Software Parameters ——— YIV-1

Y

Appendix YI

Exposed Anatomical Regions/ Applicable Menus/Display Parameters

[Head 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0000	SKULL, AP/PA (PA)	Observation of the entire skull and facial bone, entire cerebral ventricles and paranasal sinus, and gnathic joint and Turkish saddle by the Towne projection and Caldwell method	
	1	0001	SINUS, WATERÕS/CALD (PA)	Observation of the nasal cavity and its surroundings by the Waters method	
	1	0002	MANDIBLE, OBLIQUE (AP)	Observation of the mandible	
	1	0003	ORBIT (AP)	Observation of the orbit and optic canal	
	1	0004	HEAD, SOFT TISSUE (PA)	Observation of the cephalic soft part and mastoid process	
	1	0006	SKULL, PEDIATRICS (PA)	Observation of the entire skull of infants (3 or less years of age)	
	1	000B	MASTOIDS (AP)	Observation of the ear by the Sch er method, Sonnenkalb position, Stenvers projection, Meyer method, and other methods	
	1	000C	SKULL, S.M.V. (AP)	Cephalic exposure by axial projection	
	1	000D	CEPHALOGRAPHY (AP)	Routine cephalic exposure	
	1	000E	ZYGOMATIC ARCHES (AP)	Exposure of the lateral portion of the zygomatic bone	
	1	001E	NASAL BONES, LAT. (AP)	Exposure of the lateral portion of the nasal bone	
	1	0010	SKULL, LATERAL (PA)	Observation of the entire skull and facial bone, entire cerebral ventricles and paranasal sinus, and gnathic joint and Turkish saddle by the Towne projection and Caldwell method	
	1	0011	SINUS, LATERAL (PA)	Observation of the nasal cavity and its surroundings by the Waters method	
	1	0020	SKULL, TOWNS (PA)	Observation of the entire skull by the Towne projection	
	1	0021	FACIAL BONES (PA)	Observation of the facial bones.	
	1	0031	FACIAL BONES, LAT. (PA)	Observation of the facial bones.	
	1	0041	PRE-MRI ORBITS (PA)		
Contrast	1	1000	HEAD, BL. VESSEL :C (AP)	Cephalic blood vessel exposure with a contrast medium	
	1	1002	PARANASAL SINUS :C (AP)	Exposure with a contrast medium of the paranasal sinuses, the rhinopharynx and oropharynx, and the nasal cavity and nasolacrimal duct	
	1	1004	SALIVARY GLANDS :C (AP)	Parotic, sublingual, and sublingual gland exposure with a contrast medium	
Tomography	1	2000	PARANASAL SINUS :T (AP)	Tomography of paranasal sinus	
	1	2001	EAR :T (PA)	Tomography of inner and middle ear	
	1	2002	SELLA TURCICA :T (PA)	Tomography of turkish saddle	
	1	2003	MANDIBULAR JOINTT :T (AP)	Tomography of gnathic joint and mandible	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.3	4	T	0.5	0.9	A	0.6	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
4S	II	II	2.2	200	A	1.0	F	0.9	-0.1	5	T	0.5	0.9	A	0.9	-0.2	5	T	5.0	1.0	F	0.9	-0.1	5	T	0.5
4S	II	II	2.2	200	A	1.2	G	0.9	0.3	4	T	0.5	0.9	A	0.8	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
-	IV	II	2.6	200	A	1.0	G	2.0	-0.5	2	Q	0.5	1.0	A	2.1	-0.3	2	Q	3.0	1.0	G	2.0	-0.5	2	Q	0.5
4S	I	III	2.2	200	A	1.2	G	0.7	0.4	4	R	0.3	0.9	A	0.6	0.0	4	R	3.0	1.2	G	0.7	0.4	4	R	0.3
4S	II	II	2.2	200	A	1.2	H	0.9	0.4	4	T	0.5	0.9	A	0.7	0.1	4	T	5.0	1.0	H	0.9	0.4	4	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.7	0.4	5	Q	0.5	1.0	A	0.7	0.1	5	Q	7.0	1.0	G	0.7	0.4	5	Q	0.5
4S	I	II	2.2	200	S	0.8	G	0.7	0.4	8	T	5.0	0.8	A	0.7	-0.1	8	T	15.0	0.8	G	0.7	0.4	8	T	5.0
-	IV	II	2.6	200	A	1.0	G	2.0	0.3	5	Q	0.5	1.0	A	2.1	0.3	5	Q	6.0	1.0	G	2.0	0.3	5	Q	0.5
-	IV	II	2.6	200	A	1.0	G	2.0	-0.5	5	Q	0.5	1.0	A	2.1	-0.3	5	Q	6.0	1.0	G	2.0	-0.5	5	Q	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.3	4	T	0.5	0.9	A	0.6	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.3	4	T	0.5	0.9	A	0.6	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.3	4	T	0.5	0.9	A	0.6	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.6	5	T	1.0	1.0	A	0.5	0.1	5	T	7.0	1.0	G	0.7	0.6	5	T	1.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	4	R	1.0	1.0	A	0.5	0.0	4	R	7.0	1.0	G	0.7	0.5	4	R	1.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.1	5	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.0	G	0.7	0.1	5	R	1.5
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.5
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Head 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	2	0009	PANAGRAPHY (PA)	Panagraphy	
	2	0016	SKULL, PED. -1 (PA)	Tomography of the entire skull of infants by low-dose exposure	
Tomography	2	2004	PANTOMO. :T (PA)	Pantomography	
Magnification	2	6001	HEAD, MAG :M (PA)	Magnification and magnification tomography of the inner ear, auditory ossicle, and other organs with 3 or higher power	

EDR mode						Display Parameter																		
Auto		Semi	Fix		Preset mode	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
1	II	II	2.0	200	A	1.2	G	0.7	0.4	7	X	0.4	1.2	G	0.7	0.4	7	R	0.0	1.2	G	0.7	0.4	7	X	0.4
4	I	III	2.2	200	A	1.0	E	1.2	0.0	5	Q	0.5	1.0	A	1.3	0.0	5	Q	6.0	1.0	A	1.2	0.0	5	Q	6.0
1	II	II	2.2	200	A	1.1	E	1.2	0.2	7	Q	0.5	1.0	A	1.2	0.0	7	Q	3.0	1.2	A	1.2	0.0	7	Q	6.0
4	II	I	2.2	200	S	1.2	I	0.9	0.5	3	R	1.0	1.0	A	0.6	0.0	3	R	5.0	1.2	I	0.9	0.5	3	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Neck]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0100	SOFT TISSUE NECK AP (AP)	Exposure of the whole neck; observation of the neck from the cervical spine to soft parts Observation of the frontal portion of the pharynx and larynx	
	1	0101	C-SPINE, AP/OBL (AP)	Observation of the cervical spine, except through open mouth	For exposure of cervico-thoracic spine, use the 0201 “THORACIC SPINE, FRN” or 0209 “THORACIC SPINE, LAT” menu.
	1	0102	SOFT TISSUE NECK LAT (AP)	Observation of the lateral portion of the hypopharynx, larynx, and trachea, and thyroid gland	For exposure of the frontal portion, use the 0100 “CERVICAL, GENERAL” menu.
	1	0104	C-SPINE, PEDS (AP)	General view of the neck of infants (3 years old or less)	
	1	0106	C-SPINE, ODONTOID (AP)	Observation through the open mouth	
	1	0111	C-SPINE, LAT. (AP)	Observation of the cervical spine	
	1	0121	C-SPINE LAT. FIXED (AP)	Observation of the cervical spine	
	1	0131	SWIMMERS FIXED (AP)	Observation of the cervical spine by SWIMMERS technique	
Contrast	1	1100	CERVIC. BL, VESSEL :C (AP)	Cervical blood vessel exposure with a contrast medium	For tomography of the cervicothoracic spines, use the 2203 “THORA.SPINE, FRN” or 2204 “THORA SPINE, LAT” menu.
	1	1101	PHARYNX/LARYNX :C (AP)	Larynx, hypopharynx, and thyroid gland exposure with a contrast medium	
	1	1102	CERVIC, ESOPHAGUS :C (AP)	Exposure of the neck from the hypopharynx to the upper portion of the esophagus with barium	
Tomography	1	2100	CERVICAL SPINE:T (AP)	Tomography of cervical spine	
	1	2102	PHARYNX/LARYNX :T (AP)	Tomography of the hypopharynx, larynx, and upper portion of the trachea	
Plain	2	0105	LARYNX(<35KV) (AP)	Observation of the lateral portion of the neck with the thyroid gland as the target (exposure of soft parts with an MO bulb at 35 k V or lower)	
	2	0114	CERVIC., PED.-1 (AP)	General view of the neck of infants by low-dose exposure	
Contrast	2	1105	CERVICAL, MYELO. :C (AP)	Cervical spinal canal, extradural space, and intervertebral disc exposure with a contrast medium	
	2	1106	CERVICAL, LYMPHA :C (AP)	Cervical lymphatic duct and lymph node exposure with a contrast medium	
	2	1107	THORA C., MYELO :C (AP)	Thoracic spinal canal and extradural space exposure with a contrast medium	
Magni-fication	2	4100	CERVIC., MAG :M (AP)	3× or more magnification of the pharynx, larynx, and other organs	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	II	2.4	200	A	0.9	F	0.6	0.3	4	R	0.5	1.0	A	0.7	0.1	4	R	5.0	0.9	F	0.6	0.3	4	R	0.5
4S	II	II	2.4	200	A	1.1	F	0.6	0.5	5	P	0.5	1.0	A	0.5	0.1	5	P	5.0	1.1	F	0.6	0.5	5	P	0.5
4S	I	II	2.4	200	A	1.0	I	0.6	0.3	4	R	0.5	1.0	A	0.7	0.1	4	R	5.0	1.0	I	0.6	0.3	4	R	0.5
4S	I	III	2.4	200	A	1.3	F	0.7	0.0	4	R	0.3	0.9	A	0.6	0.0	4	R	3.0	1.3	F	0.7	0.0	4	R	0.3
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	1.0
4S	II	II	2.4	200	A	1.0	F	0.6	0.5	5	P	0.5	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.3	5	P	0.5
4S	II	II	2.4	200	A	1.0	F	0.6	0.0	5	P	0.5	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.0	5	P	0.5
4S	II	II	2.4	200	A	1.0	F	0.6	0.0	5	P	0.5	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.0	5	P	0.5
4S	I	II	2.4	200	A	1.0	I	0.6	0.8	4	P	1.0	1.0	A	0.5	0.3	4	P	5.0	1.0	I	0.6	0.8	4	P	1.0
4S	I	II	2.4	200	A	1.0	I	0.6	0.4	4	R	1.0	1.0	A	0.7	0.2	4	R	5.0	1.0	I	0.6	0.4	4	R	1.0
4S	II	II	2.4	200	A	1.0	I	0.6	0.4	4	R	1.0	1.0	A	0.7	0.2	4	R	5.0	1.0	I	0.6	0.4	4	R	1.0
1S	II	II	2.4	200	A	1.2	I	0.6	0.5	3	Q	1.0	1.0	A	0.5	0.3	3	Q	5.0	1.0	I	0.6	0.5	3	Q	1.5
1S	I	II	2.6	200	A	1.2	I	0.6	0.4	3	Q	1.0	1.0	A	0.6	0.1	3	Q	5.0	1.0	I	0.6	0.4	3	Q	1.5
4S	I	II	2.4	200	A	1.0	I	2.0	-0.2	4	R	0.5	1.0	A	0.9	-0.1	4	R	5.0	1.0	I	2.0	-0.2	4	R	0.5
4S	I	III	2.4	200	A	1.3	F	0.7	0.0	7	X	0.4	1.3	F	0.7	0.0	7	R	0.0	1.3	F	0.7	0.0	7	X	0.4
4S	I	II	2.4	200	A	1.0	F	0.6	0.5	5	P	1.0	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.5	5	P	1.0
4S	I	II	2.4	200	A	1.0	I	0.6	0.5	4	P	1.0	1.0	A	0.3	-0.1	4	P	5.0	1.0	I	0.6	0.5	4	P	1.0
4S	I	II	2.4	200	A	1.0	F	0.6	0.5	5	P	1.0	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.5	5	P	1.0
4	II	I	2.4	200	S	1.0	I	2.0	0.3	3	R	1.0	1.0	A	1.9	0.4	3	R	5.0	1.0	I	2.0	0.3	3	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Enhancing Type (RT), Frequency Enhancement (RE)

[Chest 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0200	CHEST, PA (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
	1	0201	T-SPINE, AP (AP)	Observation of the thoracic and cervicothoracic spines	For exposure of the thoracolumbar spine, use the 0501 "LUMBAR SPINE" menu and for exposure of the lung, adjust the radiation field as small as double the size of the thoracic spine.
	1	0209	T-SPINE, LAT. (AP)	Observation of the thoracic and cervicothoracic spine (this menu is used only when the enface radiogram is different in density from the oblique radiogram in particular)	For exposure of the cervicothoracic spine, use the 0501 "LUMBAR SPINE" menu.
	1	0202	RIBS, UPPER (AP)	Observation of the superior ribs	
	1	0203	RIBS, LOWER (PA)	Observation of the inferior ribs	
	1	0204	CLAVICLE/AC JNTS (AP)	Observation of the clavicle	
	1	0205	SCAPULA, AP (AP)	Observation of the scapula	
	1	0206	STERNUM, PA/OBL (PA)	Observation of the sternum (manubrium, sternal body, and xiphoid process)	
	1	0207	CHEST, PED (0-3YRS) (AP)	Plain thoracic exposure in infants (3 or less years of age)	
	1	020A	STERNUM, LATERAL (AP)	Exposure of thoracic soft parts; observation of the chest wall, axilla, and other sites	
	1	020B	SHOULDER (AP)	Observation of the frontal and peripheral soft parts of the shoulder joint	Use a grid.
	1	020C	AXILLARY SHOULDER (AP)	Observation of the frontal and peripheral soft parts of the shoulder joint	Use a curve cassette or make an exposure in the caudal direction.
	1	020D	WHOLE SPINE/SCOLIO (AP)	Exposure of the whole spine of infants which can be recorded on a 14×17" IP	
	1	0212	RIB, UPPER OBL. (AP)	Observation of the superior ribs oblique	
	1	021D	T-SPINE, PEDS (AP)	Observation of the thoracic spines (3 or less years of age)	
	1	0227	CHEST, NEONATE (AP)		
	1	022D	L-SPINE, PEDS (AP)	Observation of the Lumber spines (3 or less years of age)	
	1	0237	CHEST, PED PORT. (AP)	Plain thoracic exposure in infants (3 or less years of age) for portable	
	1	0230	CHEST, LATERAL (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows (this menu is used only when the enface radiogram is different in density from the oblique radiogram in particular)	
	1	0240	CHEST, AP NON-GRID (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows without grid	
	1	0250	CHEST, PORTABLE (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows for portable	
	1	0260	CHEST, DECUB. (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows for decubitus	
	1	0270	CHEST, PED (4-10YRS) (PA)	Plain thoracic exposure in infants (4 to 10 years age)	
	1	0280	CHEST, AP (GRID) (AP)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows with grid	
	1	0290	CHEST, LINE PLCMT (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	

EDR mode						Display Parameter																								
Auto		Semi	Fix		Preset mode	Two-image Display																								
						Left Image							Right Image							One-image Display										
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE				
4S	II	IV	2.2	200	A	1.0	E	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	E	1.6	0.0	4	R	0.5				
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	0.5	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	0.5				
4S	VI	II	2.2	200	A	1.0	G	0.9	0.1	5	T	0.6	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	0.6				
4S	II	II	2.2	200	A	0.7	O	0.8	-0.1	5	R	0.5	0.9	A	1.6	-0.1	5	R	5.0	0.7	O	0.8	-0.1	5	R	0.5				
4S	II	II	2.2	200	A	0.7	O	0.6	-0.25	5	R	0.5	1.0	A	0.8	0.25	5	R	5.0	0.7	O	0.6	0.25	5	R	0.5				
4S	II	II	2.2	200	A	1.2	G	0.6	0.1	5	T	0.5	0.9	A	0.9	0.0	5	T	5.0	1.2	G	0.6	0.1	5	T	0.5				
4S	II	II	2.2	200	A	1.2	G	0.6	0.2	5	T	0.5	1.0	A	0.7	0.0	5	T	5.0	1.2	G	0.6	0.2	5	T	0.5				
4S	II	II	2.2	200	A	1.0	O	1.6	0.0	5	R	0.5	0.9	A	1.4	-0.1	5	R	7.0	1.0	O	1.6	0.0	5	R	0.5				
4S	VI	II	2.2	200	A	1.1	E	1.6	-0.3	3	R	0.0	1.0	A	1.5	-0.6	3	R	1.0	1.3	E	1.6	-0.3	3	R	0.0				
-	IV	II	2.6	200	A	1.1	F	0.8	0.6	5	Q	1.0	0.7	A	1.6	0.2	5	Q	7.0	1.1	F	0.8	0.6	5	Q	1.0				
4S	VII	II	2.2	200	A	1.1	G	0.6	0.1	5	T	0.5	1.0	A	0.9	0.0	5	T	5.0	1.1	G	0.6	0.1	5	T	0.5				
4S	VII	II	2.0	200	A	1.0	O	0.6	0.5	5	T	0.5	1.0	A	0.6	0.2	5	T	5.0	1.0	O	0.6	0.5	5	T	0.5				
4S	II	II	2.2	200	A	1.2	G	0.9	0.6	5	T	0.5	1.2	A	0.9	0.2	5	T	5.0	1.0	G	0.9	0.6	5	T	0.5				
4S	II	II	2.2	200	A	0.7	O	1.6	-0.2	5	R	0.5	0.7	A	1.6	-0.1	5	R	5.0	0.7	O	1.6	-0.2	5	R	0.5				
4S	II	II	2.2	200	A	1.2	G	0.9	0.6	5	T	0.5	1.2	A	0.9	0.2	5	T	5.0	1.0	G	0.9	0.6	5	T	0.5				
4S	II	II	2.2	200	A	1.3	O	1.6	-0.4	3	R	0.0	1.0	A	1.5	-0.6	3	R	1.0	1.3	O	1.6	-0.4	3	R	0.0				
4S	II	II	2.2	200	A	1.2	G	0.9	0.6	5	T	0.5	1.2	A	0.9	0.2	5	T	5.0	1.0	G	0.9	0.6	5	T	0.5				
4S	II	II	2.2	200	A	1.3	O	1.6	-0.4	3	R	0.0	1.0	A	1.5	-0.6	3	R	1.0	1.3	O	1.6	-0.4	3	R	0.0				
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	4	R	0.5	0.9	A	1.5	-0.2	4	R	5.0	0.8	E	1.6	-0.2	4	R	0.5				
4S	II	IV	2.2	200	A	0.9	D	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	D	1.6	0.0	4	R	0.5				
4S	II	IV	2.2	200	A	1.0	D	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	D	1.6	0.0	4	R	0.5				
4S	II	IV	2.2	200	A	1.0	D	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	D	1.6	0.0	4	R	0.5				
4S	II	IV	2.2	200	A	0.9	E	1.6	-0.1	4	R	0.3	0.9	A	1.5	-0.2	4	R	5.0	0.9	E	1.6	-0.1	4	R	0.3				
4S	II	IV	2.2	200	A	0.8	E	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.8	E	1.6	0.0	4	R	0.5				
4S	II	IV	2.2	200	A	0.8	E	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.8	E	1.6	0.0	4	R	0.5				

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Enhancing Type (RT), Frequency Enhancement (RE)

[Chest 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	02A0	CHEST, PA X-WISE (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
	1	02B0	CHEST PORT X-WISE (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
Contrast	1	1200	CHEST, BL. VESSEL :C (AP)	Thoracic blood vessel exposure with a contrast medium	
	1	1201	BRONCHUS :C (AP)	Bronchial exposure with a contrast medium	
	1	1202	CHEST,ESOPHAGUS :C (AP)	Thoracic esophageal exposure with a contrast medium	
Tomography	1	2200	LUNG :T (AP)	Mainly tomography of the lung field; observation of the lung field and rib	
	1	2201	MEDIASTINUM :T (AP)	Mainly tomography of the mediastinum	
	1	2202	STERNUM :T (AP)	Sternal tomography	
	1	2203	THORA. SPINE, FRN :T (AP)	Thoracic spinal tomography	For tomography of the cervicothoracic spines, use the 2500 “LUMBAR SPINE” menu.
	1	2204	THORA, SPINE, LAT :T (AP)	Thoracic spinal tomography (this menu is used when the enface radiogram is different in density from the oblique radiogram)	For tomography of the cervicothoracic spines, use the 2500 “LUMBAR SPINE” menu.
	1	2205	SHOULDER JOINT :T (AP)	Tomography of the shoulder joint and its periphery brachial region	
Plain	2	0210	CHEST, SPECIAL-1 (PA)	For pneumoconiosis diagnosis	Load the system with the display parameters usually considered appropriate for coniosis staging.
	2	0220	CHEST, SPECIAL-2 (PA)	For mass radiography	Load the system with the display parameter considered fit for screening.
	2	0217	CHEST, PED.-1 (AP)	Low-dose plain thoracic exposure in infants	
	2	020E	CHEST, GENERAL-2 (PA)	Observation of a thin shadow in the lung field (infiltrative alveolar shadow)	
	2	020F	CHEST, PORTABLE (AP)	Observation of chest for prognosis	
	2	0211	SHOULDER, “Y” VIEW (PA)	Observation of thoracic spine in oblique radiogram	
	2	1205	CHEST, MYELO., FRN :C (AP)	Exposure with a contrast medium of the spinal canal and intervertebral discs of the thoracic spine	
Contrast	2	1206	CHEST, LYMPHA, FRN :C (AP)	Thoracic lymphatic duct and lymph node exposure with a contrast medium	
	2	1204	CHEST, MYELO., LAT :C (AP)	Exposure with a contrast medium of the spinal canal and intervertebral discs of the thoracic spine (this menu is used when the enface radiogram is different in density from the oblique radiogram)	
	2	1207	CHEST, LYMPHA, LAT :C (AP)	Thoracic lymphatic duct and lymph node exposure with a contrast medium (this menu is used when the enface radiogram is different in density from the oblique radiogram)	
	2	1208	SHLD, JNT, ARTHRO :C (AP)	Shoulder joint exposure with a contrast medium	Use a grid.
Magni-fication	2	4208	CHEST, MAG :M (AP)	3× or more magnification of the lung field, thoracic lymphoduct, and other sites	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	IV	2.2	200	A	1.0	E	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	E	1.6	0.0	4	R	0.5
4S	II	IV	2.2	200	A	1.0	D	1.6	0.0	4	R	0.5	0.9	A	1.5	0.0	4	R	5.0	0.9	D	1.6	0.0	4	R	0.5
4S	II	IV	2.2	200	A	1.0	E	1.6	0.2	5	T	1.0	0.9	A	1.3	0.0	5	T	5.0	1.0	E	1.6	0.2	5	T	1.0
4S	II	II	2.2	200	A	1.0	E	1.6	0.0	5	T	1.0	0.9	A	1.3	-0.2	5	T	5.0	1.0	E	1.6	0.0	5	T	1.0
1	II	II	2.2	200	A	1.0	N	0.3	0.1	8	T	1.0	1.0	A	0.7	0.0	8	T	7.0	1.0	N	0.3	0.1	8	T	1.0
1	II	IV	2.2	200	A	1.0	E	1.6	0.0	4	R	1.0	0.9	A	1.4	-0.1	4	R	7.0	1.0	E	1.6	0.0	4	R	1.0
1	II	II	2.2	200	A	1.0	E	1.6	0.4	4	R	1.0	0.9	A	1.3	0.1	4	R	7.0	1.0	E	1.6	0.4	4	R	1.0
1	II	II	2.2	200	A	1.0	E	1.6	0.4	4	R	1.0	0.9	A	1.3	0.1	4	R	7.0	1.0	E	1.6	0.4	4	R	1.0
1	II	II	2.2	200	A	1.1	G	0.9	0.6	4	T	1.0	1.0	A	0.7	0.2	4	T	7.0	1.1	G	0.9	0.6	4	T	1.0
1	II	II	2.2	200	A	1.0	G	0.9	0.1	4	T	1.0	1.0	A	1.0	0.0	4	T	7.0	1.0	G	0.9	0.1	4	T	1.0
1	II	II	2.2	200	A	1.0	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.4	3	T	1.0
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	4	R	0.3	-0.9	A	0.5	-1.15	4	R	0.5	1.1	E	1.6	-0.2	4	R	0.3
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	0	R	0.5	0.9	A	1.5	-0.2	0	R	3.0	0.8	E	1.6	-0.2	0	R	0.5
4S	II	II	2.2	200	A	1.0	D	1.6	-0.3	7	X	0.4	1.0	D	1.6	-0.3	7	R	0.0	1.0	D	1.6	-0.3	7	X	0.4
4S	II	IV	2.2	200	A	1.0	P	1.6	0.0	4	R	0.2	0.9	A	1.5	-0.2	4	R	5.0	1.0	P	1.6	0.0	9	R	0.5
-	IV	IV	2.2	200	A	1.2	E	1.6	-0.2	4	R	0.5	1.0	E	1.6	-0.3	4	R	5.0	1.2	E	1.6	-0.2	4	R	0.5
4S	II	II	2.2	200	A	1.2	G	0.9	0.2	5	T	1.0	1.0	A	0.7	0.1	5	T	7.0	1.2	G	0.9	0.2	5	T	1.0
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	1.0	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	1.0
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	1.0	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	1.0
4S	II	II	2.2	200	A	1.0	G	0.9	0.1	5	T	1.0	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	1.0
4S	II	II	2.2	200	A	1.0	G	0.9	0.1	5	T	1.0	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.6	0.25	5	T	1.0	1.0	A	0.9	0.0	5	T	5.0	1.2	G	0.6	0.25	5	T	1.0
4	II	II	2.0	200	S	1.2	E	1.6	-0.2	3	R	1.0	0.9	A	1.5	-0.2	3	R	5.0	1.0	E	1.6	-0.2	3	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Abdomen]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0400	ABDOMEN, GENERAL (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure	
	1	0402	ABDOMEN, PEDS (AP)	Observation of the abdomen and pelvic part of infants (3 years old or less); thoracicoabdomimal exposure in infants	
	1	0403	ABDOM., SOFT TISS. (AP)	Observation of abdominal soft parts	
	1	0410	ABDOMEN, UPRIGHT (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure with upright	
	1	0420	ABDOMEN, DECUB. (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure for decubitus	
	1	0422	ABDOMEN, PED PRT (AP)	Observation of the abdomen and pelvic part of infants (3 years old or less); thoracicoabdomimal exposure in infants	
	1	0430	ABDOMEN, PORTABLE (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure for portable	
	1	0432	ABDOMEN, NEONATE (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure for neonate	
	1	0440	U.G.I. (AP)	Upper gastric intestine	
	1	0442	PEDIATRIC G.I. (AP)	Upper gastric intestine for pediatrics	
	1	0450	B.E. (AP)		
	1	0460	S.B.F.T (AP)		
Contrast	1	1400	ABDOM., BL. VESSEL :C (AP)	Abdominal blood vessel exposure with a contrast medium	
	1	1401	UGI AIR CONTRAST :C (AP)	Gastric exposure with a contrast medium by filling, compression, double-contrast, and relief methods	
	1	1402	BE AIR CONTRAST :C (AP)	Large and small intestine exposure by the barium enema and barium meal methods	
	1	1403	I.V.P. :C (AP)	Venous, intravenous drip type, and retrograde pyelography	
	1	1404	G.B./PANCREATIC DUCT :C (AP)	Venous cholangiography, intravenous drip type cholagiography, oral cholecystography, PTC, and ERCP	
Tomography	1	3400	GALLBLADDER :T (AP)	Visualization tomography of the gallbladder	
	1	3401	KIDNEY TOMO :T (AP)	Visualization tomography of the renal pelvis	
Plain	2	0412	ABDOM., PED. -1 (AP)	Low-dose exposure of the abdomen, pelvic part, and thoracicoabdominal part of infants	
Contrast	2	1405	ABDOMEN, MYELO :C (AP)	Spinal canal and intervertebral disc exposure with a contrast medium	
	2	1406	ABDOMEN, LYMPHA :C (AP)	Abdominal lymphatic duct and lymph node exposure with a contrast medium	
Magni-fication	2	5406	ABDOMEN, MAG :M (AP)	3× or more magnification of the abdominal lymphatic duct, bones, and other organs	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	0.5	0.9	A	0.7	0.0	3	Q	5.0	0.9	D	1.6	0.6	3	Q	0.5
4S	II	II	2.0	200	A	1.2	D	1.6	0.1	3	R	0.3	1.2	A	1.6	0.25	3	R	3.0	1.2	D	1.6	0.1	3	R	0.3
-	IV	II	2.6	200	A	1.1	F	2.0	0.0	3	Q	1.0	0.7	A	1.6	-0.2	3	Q	7.0	1.1	F	2.0	0.0	3	Q	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.45	3	Q	0.5	0.9	A	0.7	0.0	3	Q	5.0	1.1	D	1.6	0.45	3	Q	0.5
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	0.5	0.9	A	0.7	0.0	3	Q	5.0	0.9	D	1.6	0.2	3	Q	0.5
4S	II	II	2.0	200	A	1.2	D	1.6	0.1	3	R	0.0	1.2	A	1.6	0.25	3	R	3.0	1.2	D	1.6	0.1	3	R	0.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	0.5	0.9	A	0.7	0.0	3	Q	5.0	0.9	D	1.6	0.2	3	Q	0.5
4S	II	II	2.0	200	A	1.2	D	1.6	0.15	3	Q	0.0	1.2	A	1.6	0.25	3	Q	3.0	1.2	D	1.6	0.15	3	Q	0.0
4S	II	II	2.0	200	A	1.3	N	0.6	0.3	4	Q	0.5	0.9	A	0.7	0.0	4	Q	5.0	1.3	N	1.6	0.3	4	Q	0.5
4S	II	II	2.0	200	A	0.9	D	1.6	0.2	3	Q	0.5	1.2	A	1.6	0.25	3	Q	3.0	0.9	D	1.6	0.2	3	Q	0.5
4S	II	II	2.0	200	A	1.3	N	0.6	0.3	4	Q	0.5	0.9	A	0.7	0.0	4	Q	5.0	1.3	N	1.6	0.3	4	Q	0.5
4S	II	II	2.0	200	A	1.3	N	0.6	0.3	4	Q	0.5	0.9	A	0.7	0.0	4	Q	5.0	1.3	N	1.6	0.3	4	Q	0.5
4S	II	II	2.0	200	A	1.1	D	0.6	0.4	5	T	1.0	0.9	A	0.5	0.0	5	T	5.0	1.1	D	0.6	0.4	5	T	1.0
1S	III	II	2.0	200	A	1.0	N	0.3	0.3	8	T	1.0	1.0	A	0.5	0.2	8	T	7.0	1.3	N	0.3	0.3	8	T	1.0
1S	III	II	2.0	200	A	1.0	N	0.3	0.3	8	T	1.0	1.0	A	0.5	0.2	8	T	7.0	1.3	N	0.3	0.3	8	T	1.0
4S	II	II	2.0	200	A	1.0	D	0.6	0.3	4	T	0.5	1.0	A	0.5	0.2	4	T	7.0	1.0	D	0.6	0.3	4	T	0.5
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	0.5	1.0	A	0.5	0.2	4	T	7.0	1.2	D	0.6	0.3	4	T	0.5
1	II	II	2.0	200	A	1.2	J	0.6	0.3	4	Q	1.0	1.0	A	0.6	0.0	4	Q	7.0	1.0	J	0.6	0.3	4	Q	1.5
1	II	II	2.0	200	A	1.0	F	0.6	0.3	3	Q	0.3	1.0	A	0.5	0.2	3	Q	5.0	1.0	F	0.6	0.3	3	Q	0.3
4S	II	II	2.0	200	A	1.2	D	1.6	0.25	7	X	0.4	1.2	A	1.6	0.25	7	R	0.0	1.2	D	1.6	0.25	7	X	0.4
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	1.0	1.0	A	1.0	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.4	5	T	1.0	0.9	A	0.5	0.0	5	T	5.0	1.1	D	0.6	0.4	5	T	1.0
4	II	I	2.0	200	S	1.1	D	0.6	0.4	4	R	1.0	0.9	A	0.5	0.0	4	T	5.0	1.1	D	0.6	0.4	4	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Enhancing Type (RT), Frequency Enhancement (RE)

[Pelvis 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0500	PELVIS, GENERAL (AP)	Observation of the pelvis, ilium, and peripheral soft parts	
	1	0501	L-SPINE, AP/OBL (AP)	Observation of the lumbar and thoracolumbar spine	
	1	0502	SAC/COCCYX, SI JNT (AP)	Observation of the sacrum and coccyx	
	1	0503	UTERUS, PREGNANCY (AP)	Exposure of fetus and placenta	
	1	0504	PELVIMETRY (AP)	Measurement of the pelvic dimensions or proportions	
	1	0506	PELVIS, PEDIATRICS (AP)	Observation of the pelvis and peripheral soft parts of infants (3 years old or less)	
	1	0507	LUMB., SOFT TISSUE (AP)	Observation of soft parts of the abdomen, kidney, and other organs	
	1	0508	HIP JOINT (AP)	Observation of the hip joint (Use the FIX MODE when protector is used.)	
	1	050A	HIP J., PEDIATRICS (AP)	Observation of the hip joint of infants- 3 or less years of age. (Use the FIX MODE when protector is used.)	
	1	0510	PELVIS, PORTABLE (AP)	Observation of the pelvis, ilium, and peripheral soft parts for portable	
	1	0511	LUMBAR, LATERAL (AP)	Observation of the lumbar and thoracolumbar spine for lateral	
	1	0512	L5-S1 SPOT (AP)	Spot exposure from L5 to S1	
	1	0518	FEMUR, PROXIMAL (AP)	Observation of femure	
	1	0521	SWIMMERS (AP)	Observation of shoulder joint at SWIMMERS technique	
	1	0528	HIP X-TABLE FIXED (AP)	Observation of the hip joint (Use the FIX MODE when protector is used.)	
	1	0531	L-SPINE LAT FIXED (AP)	Observation of the lumbar and thoracolumbar spine	
Contrast	1	1500	PELVIS, BL. VESSEL :C (AP)	Pelvic blood vessel exposure with a contrast medium	
	1	1501	BLADDER CONTRAST :C (AP)	Urinary bladder and urethra exposure with a contrast medium	
Tomography	1	2500	LUMBAR SPINE :T (AP)	Tomography of the lumbar and thoracolumbar spine	
	1	2501	SACRUM :T (AP)	Tomography of the sacrum	
	1	2502	HIP JOINT :T (AP)	Tomography of the hip joint and femoral region	
Plain	2	0516	PELVIS, PED.-1 (AP)	Low-dose exposure of the pelvis and peripheral soft parts of infants	
	2	051A	HIP J., PED.-1 (AP)	Low-dose infantile hip joint exposure (Use the FIX MODE when protector is used.)	
	2	050C	HIP, X-TABLE LAT. (AP)	Observation of the hip joint by axial projection	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	0.9	O	0.6	0.4	4	T	0.5	1.0	A	0.6	-0.2	4	T	5.0	0.9	O	0.6	0.4	4	T	0.5
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	0.5	1.0	A	0.9	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	0.5
4S	II	II	2.0	200	A	0.9	O	0.9	0.2	5	T	0.5	1.0	A	1.2	0.1	5	T	5.0	0.9	O	0.9	0.2	5	T	0.5
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	1.0	0.9	A	0.7	0.0	3	Q	5.0	1.1	D	0.6	0.2	3	Q	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	1.0	0.9	A	0.7	0.0	3	Q	5.0	1.1	D	0.6	0.2	3	Q	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	5	R	0.3	0.9	A	1.2	-0.2	5	R	3.0	1.3	D	1.6	0.2	5	R	0.3
-	IV	II	2.6	200	A	1.1	F	2.0	0.0	3	Q	1.0	0.7	A	1.6	-0.2	3	Q	7.0	1.1	F	2.0	0.0	3	Q	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.4	5	R	0.5	0.9	A	1.6	0.0	5	R	5.0	1.3	D	1.6	0.4	5	R	0.5
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	5	R	0.3	0.9	A	1.2	-0.2	5	R	3.0	1.3	D	1.6	0.2	5	R	0.3
4S	II	II	2.0	200	A	0.9	O	0.6	0.2	4	T	0.5	1.0	A	0.6	-0.2	4	T	5.0	0.9	O	0.6	0.2	4	T	0.5
4S	II	II	2.0	200	A	1.1	O	0.9	0.45	5	T	0.3	1.0	A	0.9	0.1	5	T	5.0	1.1	O	0.9	0.45	5	T	0.3
4S	II	II	2.0	200	A	0.9	O	0.9	0.3	5	T	0.5	1.0	A	1.2	0.1	5	T	5.0	0.9	O	0.9	0.3	5	T	0.5
4S	II	II	2.0	200	A	1.3	D	1.6	0.4	5	R	0.5	0.9	A	1.6	0.0	5	R	5.0	1.3	D	1.6	0.4	5	R	0.5
4S	II	II	2.0	200	A	1.1	J	0.9	0.7	5	T	0.5	1.0	A	0.9	0.1	5	T	5.0	1.1	J	0.9	0.7	5	T	0.5
4S	II	II	2.0	200	A	1.0	O	0.6	0.0	4	T	0.5	1.0	A	0.6	-0.2	4	T	5.0	1.0	O	0.6	0.0	4	T	0.5
4S	II	II	2.0	200	A	1.0	O	0.9	0.0	5	T	0.5	1.0	A	0.9	0.1	5	T	5.0	1.0	L	0.9	0.0	5	T	0.5
4S	II	II	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.9	O	0.6	0.5	4	T	1.0
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	0.5	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	0.5
1	II	II	2.0	200	A	1.1	O	0.9	0.4	4	Q	1.0	1.0	A	0.9	0.1	4	Q	7.0	1.1	O	0.9	0.4	4	Q	1.0
1	II	II	2.0	200	A	1.1	O	0.9	0.8	4	Q	1.0	1.0	A	0.9	0.5	4	Q	7.0	1.1	O	0.9	0.8	4	Q	1.0
1	II	II	2.0	200	A	1.0	O	0.6	0.5	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	1.0	O	0.6	0.5	3	T	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	7	X	0.4	1.3	D	1.6	0.2	7	R	0.0	1.3	D	1.6	0.2	7	X	0.4
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	7	X	0.4	1.3	D	1.6	0.2	7	R	0.0	1.3	D	1.6	0.2	7	X	0.4
-	V	II	2.0	200	A	1.3	D	1.6	0.4	5	T	0.5	0.8	O	1.6	0.4	5	T	1.0	1.3	D	1.6	0.4	5	T	0.5

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Pelvis 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Contrast	2	1502	ABD. HYSTERO. :C (AP)	Uterus and salpinx exposure with a constrast medium	
	2	1503	SEMI. VES., VAS. :C (AP)	Seminal vesicle and seminal duct exposure with a contrast medium	
	2	1505	PELVIS, MYELO. :C (AP)	Pelvic spinal canal, extradural space, and intervertebral disc exposure with a contrast medium	
	2	1506	PELVIS, LYMPHA :C (AP)	Pelvic lymphatic duct and lymph node exposure with a contrast medium	
	2	1507	HIP JNT, ARTHRO. :C (AP)	Hip joint exposure with a contrast medium	
Magni-fication	2	5506	PELVIS, MAG :M (AP)	3× or more magnification of the pelvic lymphatic duct, bone, and other organs	

EDR mode						Display Parameter																		
Auto		Semi	Fix		Preset mode	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	1.0	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	1.0
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	1.0	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	1.0
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	1.0	1.0	A	1.0	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	1.0
4S	II	II	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.9	O	0.6	0.5	4	T	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.5	4	T	1.0	0.9	A	1.6	0.0	4	T	5.0	1.3	D	1.6	0.5	4	T	1.0
4	II	I	2.0	200	S	0.9	O	0.6	0.5	5	R	1.0	1.0	A	0.5	0.0	5	T	5.0	0.9	O	0.6	0.5	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Upper Extremity]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0600	HUMERUS (AP)	Observation of the humerus, its soft part, and the elbow joint	
	1	0601	FOREARM (AP)	Observation of the antebrachial bone, its soft part, and the wrist joint	
	1	0603	HUMERUS SOFT TISS. (AP)	Observation of the brachial soft part as the main target	
	1	0605	FORE ARM, SOFT TISS. (AP)	Observation of the antebrachial soft part as the main target	
	1	0606	HAND (AP)	Observation of the metacarpal bone and peripheral soft parts	
	1	0607	FINGER (AP)	Observation of the phalanges and peripheral soft parts	
	1	0608	ARM, PEDIATRICS (AP)	Observation of the arm of infants (3 years old or less)	
	1	0609	HAND, PEDIATRICS (AP)	Observation of the hand of infants (3 years old or less)	
	1	060B	WRIST CARPAL TUNN. (AP)	Elbow joint and carpal tunnel exposure by axial projection	
	1	0610	ELBOW (AP)	Observation of the elbow	
	1	0611	WRIST (AP)	Observation of wrist and wrist joint	
	1	0616	HAND, LATERAL (AP)	Observation of hand lateral	
	1	0620	UPPER EXT. CAST (AP)	Observation of upper ext. in cast	
Contrast	1	1600	UP. ARM, BL. VESSEL :C (AP)	Brachial blood vessel exposure with a contrast medium	
	1	1601	FO. ARM, BL. VESSEL :C (AP)	Antebrachial blood vessel exposure with a contrast medium	
	1	1602	HAND, BL. VESSEL:C (AP)	Hand blood vessel exposure with a contast medium	
Tomography	1	2601	ELBOW JOINT :T (AP)	Elbow joint tomography	
Contrast	2	1610	UPPER ARM, LYMPHA :C (AP)	Brachial lymphatic duct and lymph node exposure with a contrast medium	
	2	1611	FORE ARM, LYMPHA :C (AP)	Antebrachial lymphatic duct and lymph node exposure with a contrast medium	
	2	1612	HAND, LYMPHA :C (AP)	Exposure with a contrast medium of the lymphatic duct and lymph node in the hand	
	2	1620	ELBOW JNT, ARTHRO :C (AP)	Elbow joint exposure with a contrast medium	
	2	1622	WRIST JNT, ARTHRO :C (AP)	Exposure of the joint of the hand with a contrast medium	
Magnification	2	4607	UP. EXTREMITY, MAG :M (AP)	3× or more magnification of the phalanges and other bones	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	0.5	1.0	A	0.6	0.0	5	T	5.0	0.8	O	0.6	0.4	5	T	0.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	7	T	1.0	1.0	A	0.8	0.0	7	T	5.0	0.8	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	3	T	0.5	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.4	3	T	0.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.2	3	T	0.5	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.2	3	T	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.35	7	T	1.0	0.9	A	0.6	0.35	7	T	5.0	0.9	O	0.6	0.35	7	T	1.0
4S	I	III	2.0	200	A	0.9	O	0.6	0.3	7	T	1.0	0.9	A	0.7	0.1	7	T	5.0	0.9	O	0.6	0.3	7	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	5	T	0.3	1.0	A	0.6	0.1	5	T	3.0	1.0	O	0.6	0.5	5	T	0.3
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	5	T	0.3	0.9	A	0.7	0.1	5	T	3.0	0.8	O	0.6	0.4	5	T	0.3
-	IV	III	2.0	200	A	1.1	F	2.0	0.0	7	T	1.0	0.7	A	1.6	-0.2	7	T	7.0	1.1	F	2.0	0.0	7	T	1.0
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	7	T	1.0	1.0	A	0.6	0.0	7	T	5.0	0.9	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.3	7	T	1.0	1.0	A	0.8	0.0	7	T	5.0	0.8	O	0.6	0.3	7	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.7	7	T	1.0	0.9	A	0.6	0.7	7	T	5.0	1.0	O	0.6	0.7	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.5	5	T	0.5	1.0	A	0.6	0.0	5	T	5.0	0.8	O	0.6	0.5	5	T	0.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.3	4	T	1.0	1.0	A	0.7	0.0	4	T	5.0	0.8	O	0.6	0.3	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.6	4	T	1.0	0.9	A	0.7	0.2	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
1	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	1.0	1.0	A	0.6	0.0	5	T	5.0	0.9	O	0.6	0.4	5	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.3	4	T	1.0	1.0	A	0.7	0.0	4	T	5.0	0.8	O	0.6	0.3	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.6	4	T	1.0	0.9	A	0.7	0.2	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.3	3	T	5.0	0.8	O	0.6	0.4	3	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.2	3	T	1.0	1.0	A	0.8	0.0	3	T	5.0	0.8	O	0.6	0.2	3	T	1.5
4	I	II	2.0	200	S	1.1	I	0.6	0.3	5	R	1.0	0.9	A	0.7	0.1	5	R	5.0	1.1	I	0.6	0.3	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Lower Extremity 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0700	FEMUR, DISTAL (AP)	Observation of the femoral bone, soft tissues and the knee (It should be noted however that knee joint observation by axial projection is excluded.)	
	1	0701	TIB/FIB (AP)	Observation of the crural bone and soft part	
	1	0703	FEMUR, SOFT TISS. (AP)	Observation of the femoral soft part as the main target	
	1	0705	TIB/FIB, SOFT TISS. (AP)	Observation of the crural soft part as the main target	
	1	0706	FOOT (AP)	Observation of the foot, articulation, tarsal bone, and calcaneus by axial projection	
	1	0707	TOES (AP)	Observation of the toe and phalanges	
	1	0708	LEG. PEDIATRICS (AP)	Observation of the lower extremities of infants (3 years old or less)	
	1	0709	FOOT, PEDIATRICS (AP)	Observation of the foot of infants (3 years old or less)	
	1	070B	KNEE, SUNRISE (AP)	Patellar exposure by axial projection	
	1	0710	KNEE, AP/OBL (AP)	Observation of the knee joint	
	1	0711	ANKLE (AP)	Observation of the ankle joint	
	1	0716	FOOT, LATERAL (AP)	Observation of the foot, articulation, tarsal bone, and calcaneus by axial projection for lateral position	
	1	071B	PATL. AXL., ARTHRO :C (AP)	Observation of the patella axial at arthrography	
	1	0720	KNEE, LATERAL (AP)	Observation of the knee joint for lateral position	
	1	0730	LOWER EXT. CAST (AP)	Observation of the lower extrem. in cast	
	1	0731	CALCANEOUS, AXIAL (AP)		
Contast	1	1700	THIGH, BL. VESSEL :C (AP)	Femoral blood vessel exposure with a contrast medium	
	1	1701	LO. LEG, BL. VESSEL :C (AP)	Crural blood vessel exposure with a contrast medium	
	1	1702	FOOT, BL. VESSEL :C (AP)	Foot blood vessel exposure with a contrast medium	
Tomography	1	2701	KNEE JOINT :T (AP)	Knee joint tomography	
	1	2702	ANKLE JOINT :T (AP)	Ankle joint tomography	
Contrast	2	1710	THIGH, LYMPHA :C (AP)	Femoral lymphatic duct and lymph node exposure with a contrast medium	
	2	1711	LOWER LEG, LYMPHA :C (AP)	Crural lymphatic duct and lymph node exposure with a contrast medium	
	2	1712	FOOT, LYMPHA :C (AP)	Exposure of the lymphatic duct and lymph node of the foot with a contrast medium	
	2	1720	KNEE JNT, ARTHRO :C (AP)	Knee joint exposure with a contrast medium	

EDR mode						Display Parameter																			
Auto		Semi	Fix		Preset mode	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	0.8	O	0.6	0.5	7	T	1.0	1.0	A	0.6	0.1	7	T	5.0	0.8	O	0.6	0.5	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	7	T	1.0	1.0	A	0.7	0.1	7	T	5.0	0.8	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	3	T	0.5	1.0	A	0.6	0.1	3	T	5.0	1.0	O	0.6	0.5	3	T	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	3	T	0.5	1.0	A	0.7	0.1	3	T	5.0	0.9	O	0.6	0.4	3	T	0.5
4S	VI	III	2.0	200	A	0.9	O	0.6	0.1	7	T	1.0	0.8	A	1.0	0.1	7	T	5.0	0.9	O	0.6	0.1	7	T	1.0
4S	I	III	2.0	200	A	0.9	O	0.6	-0.2	7	T	1.0	0.9	A	0.9	-0.1	7	T	5.0	0.9	O	0.6	-0.2	5	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	5	T	0.3	1.0	A	0.6	0.1	5	T	3.0	1.0	O	0.6	0.5	5	T	0.3
4S	I	III	2.0	200	A	0.8	O	0.6	0.3	5	T	0.3	0.9	A	0.7	0.0	5	T	3.0	0.8	O	0.6	0.3	5	T	0.3
-	IV	III	2.6	200	A	1.1	F	2.0	0.0	5	T	1.0	0.7	A	2.0	-0.5	5	T	7.0	1.1	F	2.0	0.0	5	T	1.0
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	7	T	1.0	1.0	A	0.6	0.1	7	T	5.0	0.9	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	7	T	1.0	1.0	A	0.7	0.1	7	T	5.0	0.8	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.3	7	T	1.0	0.8	A	1.0	0.1	7	T	5.0	0.8	O	0.6	0.3	7	T	1.0
4S	I	III	2.0	200	A	1.1	F	2.0	0.0	3	T	1.0	0.7	A	2.0	-0.5	3	T	7.0	1.1	F	2.0	0.0	3	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.5	7	T	1.0	1.0	A	0.6	0.1	7	T	5.0	0.8	O	0.6	0.5	7	T	1.0
4S	I	III	2.0	200	A	0.8	O	0.6	0.5	5	T	0.5	1.0	A	0.6	0.1	5	T	5.0	0.8	O	0.6	0.5	5	T	0.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	7	T	1.0	1.0	A	0.7	0.1	7	T	5.0	0.8	O	0.6	0.4	7	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.6	4	T	1.0	1.0	A	0.5	0.1	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.6	0.1	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	4	T	1.0	0.8	A	1.0	0.1	4	T	5.0	0.7	O	0.6	0.4	4	T	1.5
1	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	1.0	1.0	A	0.6	0.1	5	T	5.0	0.9	O	0.6	0.4	5	T	1.5
1	I	III	2.0	200	A	0.8	O	0.6	0.3	5	T	1.0	0.8	A	1.0	0.1	5	T	5.0	0.7	O	0.6	0.3	5	T	1.5
4S	II	III	2.0	200	A	1.0	O	0.6	0.6	4	T	1.0	1.0	A	0.5	0.1	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.6	0.1	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	4	T	1.0	0.8	A	1.0	0.1	4	T	5.0	0.7	O	0.6	0.4	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	0.8	O	0.6	0.5	3	T	1.5

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Enhancing Type (RT), Frequency Enhancement (RE)

[Lower Extremity 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Contrast	2	1722	ANKLE JNT, ARTHRO :C (AP)	Ankle joint exposure with a contrast medium	
	2	071B	PATL. AXL., ARTHRO :C (AP)	Exposure of patellar with a contrast medium by axial projection	
Magni-fication	2	4707	LO. EXTREMITY, MAG :M (AP)	3× or more magnification of the toe and other sites	

EDR mode						Display Parameter																		
Auto		Semi	Fix		Preset mode	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	0.8	O	0.6	0.4	3	T	1.5
-	IV	III	2.6	200	A	1.1	F	2.0	0.0	3	T	1.0	0.7	A	2.0	-0.5	3	T	7.0	1.1	F	2.0	0.0	3	T	1.0
4	I	II	2.0	200	S	1.1	I	0.6	-0.1	5	R	1.0	0.9	A	1.0	0.0	5	R	5.0	1.1	I	0.6	-0.1	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Test 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
	1	0900	SENSITIVITY		
	1	0901	SHARPNESS		
	1	0902	LINEARITY		
	1	0903	IMAGE-FORMAT		
	1	0904	CONTRAST		
	1	0905	MAX 0.5		
	1	0906	MAX 1.0		
	1	0907	MAX 2.0		
	1	0908	MAX 3.0		
	1	0909	MAX 4.0		
	1	090A	AVE 0.5		
	1	090B	AVE 1.0		
	1	090C	AVE 2.0		
	1	090D	AVE 3.0		
	1	090E	AVE 4.0		
	1	0910	SENSITIVITY HQ	Sensitivity for HQ image (50 reading)	
	1	091B	SHAD. /RELATIVE SENS.	A test menu that subjects an IP to uniform exposure to check shading uniformity and S values. SEMI AUTO mode applied at L=1.	
	1	091B	1 SHOT PHANTOM	A test menu that exposes a phantom for checking several performance items.	
	1	091B	ERASURE (PRE-EXPOSURE)	A test menu that subjects an IP to a large exposure dose of approximately 100mR to 200mR.	
	1	091E	ERASURE (REFRESHED IP)	A test menu that handles an IP that has been subjected to Erasure2 (Refreshed IP).	
	1	091E	DARK NOISE TEST	A test menu that checks occurrence of an error after Erasure2 (Refreshed IP) is conducted.	
	1	5900	AVE5CT08	This is to output images in 0.8 (GT:A) of density for Semi III (CT).	Auto V (Dmin = 1.0) using the Type II S_2 in the Auto Mode.
	1	5901	AVE5RT08	This is to output images in 0.8 (GT:A) of density for Semi III (RT).	Auto V (Dmin = 0.4) using the Type II S_2 in the Auto Mode.
	1	5902	AVE5RM08	This is to output images in 0.8 (GT:A) of density for Semi III (RM).	Auto V (Dmin = 0.2) using the Type II S_2 in the Auto Mode.
	1	5903	AVE5RB08	This is to output images in 0.8 (GT:A) of density for Semi III (RB).	Auto V (Dmin = 0.0) using the Type II S_2 in the Auto Mode.

EDR mode						Display Parameter																														
Auto		Semi		Fix	Preset mode	Two-image Display																														
						Left Image							Right Image							One-image Display																	
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	3.0	200	F	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	5.0										
-	V	I	2.0	200	S	1.3	C	1.2	0.0	3	R	0.0	1.3	C	1.2	0.0	3	R	3.0	1.3	C	1.2	0.0	3	R	0.0										
-	IV	I	0.5	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	IV	I	1.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	IV	I	2.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	IV	I	3.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	IV	I	4.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	0.5	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	2.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	3.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	4.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	1.0	200	F	1.0	A	1.0	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	4.0	200	F	1.0	A	1.0	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	I	4.0	200	F	1.0	A	1.0	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0										
-	V	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0										
-	V	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0										
-	V	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0										
-	V	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0										

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Enhancing Type (RT), Frequency Enhancement (RE)

[Test 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
	1	5904	AVE5CB08	This is to output images in 0.8 (GT:A) of density for Semi III (CB).	Auto V (Dmin = 0.6) using the Type II S_2 in the Auto Mode.
	1	5905	AVE5LB08	This is to output images in 0.8 (GT:A) of density for Semi III (LB).	Auto V (Dmin = 1.2) using the Type II S_2 in the Auto Mode.
	1	5906	AVE5LM08	This is to output images in 0.8 (GT:A) of density for Semi III (LM).	Auto V (Dmin = 1.4) using the Type II S_2 in the Auto Mode.
	1	5907	AVE5LT08	This is to output images in 0.8 (GT:A) of density for Semi III (LT).	Auto V (Dmin = 1.6) using the Type II S_2 in the Auto Mode.
	1	5908	AVE5CM08	This is to output images in 0.8 (GT:A) of density for Semi III (CM).	Auto V (Dmin = 0.8) using the Type II S_2 in the Auto Mode.
	1	6900	AVE5CT12	This is to output images in 1.2 (GT:A) of density for Semi III (CT).	Auto IV (Dmin = 1.8) using the Type II S_2 in the Auto Mode.
	1	6901	AVE5RT12	This is to output images in 1.2 (GT:A) of density for Semi III (RT).	Auto IV (Dmax = 1.2) using the Type II S_1 in the Auto Mode.
	1	6902	AVE5RM12	This is to output images in 1.2 (GT:A) of density for Semi III (RM).	Auto IV (Dmax = 1.0) using the Type II S_1 in the Auto Mode.
	1	6903	AVE5RB12	This is to output images in 1.2 (GT:A) of density for Semi III (RB).	Auto IV (Dmax = 0.8) using the Type II S_1 in the Auto Mode.
	1	6904	AVE5CB12	This is to output images in 1.2 (GT:A) of density for Semi III (CB).	Auto IV (Dmax = 1.4) using the Type II S_1 in the Auto Mode.
	1	6905	AVE5LB12	This is to output images in 1.2 (GT:A) of density for Semi III (LB).	Auto IV (Dmax = 2.0) using the Type II S_1 in the Auto Mode.
	1	6906	AVE5LM12	This is to output images in 1.2 (GT:A) of density for Semi III (LM).	Auto IV (Dmax = 2.2) using the Type II S_1 in the Auto Mode.
	1	6907	AVE5LT12	This is to output images in 1.2 (GT:A) of density for Semi III (LT).	Auto IV (Dmax = 1.0) using the Type II S_1 in the Auto Mode.
	1	6908	AVE5CM12	This is to output images in 1.2 (GT:A) of density for Semi III (CM).	Auto IV (Dmax = 1.6) using the Type II S_1 in the Auto Mode.
	1	7900	AVE5CT16	This is to output images in 1.6 (GT:A) of density for Semi III (CT).	Auto IV (Dmax = 1.8) using the Type I S_1 in the Auto Mode.
	1	7901	AVE5RT16	This is to output images in 1.6 (GT:A) of density for Semi III (RT).	Auto IV (Dmax = 1.2) using the Type I S_1 in the Auto Mode.
	1	7902	AVE5RM16	This is to output images in 1.6 (GT:A) of density for Semi III (RM).	Auto IV (Dmax = 1.0) using the Type I S_1 in the Auto Mode.
	1	7903	AVE5RB16	This is to output images in 1.6 (GT:A) of density for Semi III (RB).	Auto IV (Dmax = 0.8) using the Type I S_1 in the Auto Mode.
	1	7904	AVE5CB16	This is to output images in 1.6 (GT:A) of density for Semi III (CB).	Auto IV (Dmax = 1.4) using the Type I S_1 in the Auto Mode.
	1	7905	AVE5LB16	This is to output images in 1.6 (GT:A) of density for Semi III (LB).	Auto IV (Dmax = 2.0) using the Type I S_1 in the Auto Mode.
	1	7906	AVE5LM16	This is to output images in 1.6 (GT:A) of density for Semi III (LM).	Auto IV (Dmax = 2.2) using the Type I S_1 in the Auto Mode.
	1	7907	AVE5LT16	This is to output images in 1.6 (GT:A) of density for Semi III (LT).	Auto IV (Dmax = 2.4) using the Type I S_1 in the Auto Mode.
	1	7908	AVE5CM16	This is to output images in 1.6 (GT:A) of density for Semi III (CM).	Auto IV (Dmax = 1.8) using the Type I S_1 in the Auto Mode.

EDR mode						Display Parameter																								
Auto		Semi	Fix		Preset mode	Two-image Display																								
						Left Image							Right Image							One-image Display										
PRIEF	Type	Type	Lfix	Sfix		GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE				
-	V	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	V	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	V	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	V	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	V	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				
-	IV	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0				

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Dynamic Range Control Processing/Tomographic Artifacts Suppression Processing 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0111	C-SPINE, LAT. (AP)	Observation of the cervical spine	
	1	0200	CHEST, GENREAL (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
	1	0202	RIBS, UPPER (AP)	Observation of the superior ribs	
	1	0209	T-SPINE, LAT. (AP)	Observation of the thoracic and cervicothoracic spine (this menu is used only when the enface radiogram is different in density from the oblique radiogram in particular)	
	1	020A	STERNUM, LATERAL (AP)	Exposure of thoracic soft parts; observation of the chest wall, axilla, and other sites	
	1	020B	SHOULDER (AP)	Observation of the frontal and peripheral soft parts of the shoulder joint	
	1	0212	RIB, UPPER OBL. (AP)	Observation of the superior ribs oblique	
	1	0230	CHEST, LATERAL (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows (this menu is used only when the enface radiogram is different in density from the oblique radiogram in particular)	
	1	0240	CHEST, AP NON-GRID (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows without grid	
	1	0250	CHEST, PORTABLE (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows for portable	
	1	0260	CHEST, DECUB. (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows for decubitus	
	1	0280	CHEST, AP (GRID) (AP)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows with grid	
	1	0500	PELVIS, GENERAL (AP)	Observation of the pelvis, ilium, and peripheral soft parts	
	1	0508	HIP JOINT (AP)	Observation of the hip joint (Use the FIX MODE when protector is used.)	
	1	0510	PELVIS, PORTABLE (AP)	Observation of the pelvis, ilium, and peripheral soft parts for portable	
	1	0511	LUMBER, LATERAL (AP)	Observation of the lumbar and thoracolumbar spine for lateral	
	1	0518	FEMUR, PROXIMAL (AP)	Observation of femure	
	1	0521	SWIMMERS (AP)	Observation of shoulder joint at SWIMMERS technique	
	1	0600	HUMERUS (AP)	Observation of the humerus, its soft part, and the elbow joint	
	1	0601	FOREARM (AP)	Observation of the antebrachial bone, its soft part, and the wrist joint	
	1	0606	HAND (AP)	Observation of the metacarpal bone and peripheral soft parts	
	1	0607	FINGER (AP)	Observation of the phalanges and peripheral soft parts	
	1	0610	ELBOW (AP)	Observation of the elbow	
	1	0611	WRIST (AP)	Observation of wrist and wrist joint	
	1	0616	HAND, LATERAL(AP)	Observation of hand lateral	

EDR mode						Display Parameter																							
Auto		Semi	Fix		Preset mode	Two-image Display																							
						Left Image						Right Image						One-image Display											
PRIEF	Type	Type	Lfix	Sfix		DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE						
4S	II	II	2.4	200	A	2	C	0.5	5	1	0.0	2	C	0.5	5	1	0.0	2	C	0.5	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.0	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	II	2.2	200	A	2	B	0.5	5	1	0.0	2	B	0.5	5	1	0.0	2	B	0.5	5	1	0.0						
4S	VI	II	2.2	200	A	2	C	0.6	5	1	0.0	2	C	0.6	5	1	0.0	2	C	0.6	5	1	0.0						
-	IV	II	2.6	200	A	2	C	0.5	5	1	0.0	2	C	0.5	5	1	0.0	2	C	0.5	5	1	0.0						
4S	VII	II	2.2	200	A	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0						
4S	II	II	2.2	200	A	2	B	0.5	5	1	0.0	2	B	0.5	5	1	0.0	2	B	0.5	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0	2	B	0.6	5	1	0.0						
4S	II	II	2.0	200	A	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0						
4S	II	II	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	II	II	2.0	200	A	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0	2	G	0.5	5	1	0.0						
4S	II	II	2.0	200	A	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0						
4S	II	II	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	II	II	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0						
4S	I	III	2.0	200	A	2	G	0.4	5	1	0.0	2	G	0.4	5	1	0.0	2	G	0.4	5	1	0.0						
4S	I	III	2.0	200	A	2	F	0.3	5	1	0.0	2	F	0.3	5	1	0.0	2	F	0.3	5	1	0.0						

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

[Dynamic Range Control Processing/Tomographic Artifacts Suppression Processing 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0700	FEMUR, DISTAL(AP)	Observation of the femoral bone, soft tissues and the knee (It should be noted however that knee joint observation by axial projection is excluded.)	
	1	0701	TIB/FIB(AP)	Observation of the crural bone and soft part	
	1	0706	FOOT(AP)	Observation of the foot, articulation, tarsal bone, and calcaneus by axial projection	
	1	0707	TOES(AP)	Observation of the toe and phalanges	
	1	070B	KNEE, SUNRISE(AP)	Patellar exposure by axial projection	
	1	0711	ANKLE(AP)	Observation of the ankle joint	
	1	0716	FOOT, LATERAL(AP)	Observation of the foot, articulation, tarsal bone, and calcaneus by axial projection for lateral position	
	1	0710	KNEE, AP/OBL(AP)	Observation of the knee joint	
	1	0720	KNEE, LATERAL(AP)	Observation of the knee joint for lateral position	
Tomography	1	2200	LUNG	Mainly tomography of the lung field; observation of the lung field and rib	
Magnification	1	0300	BREAST(PA)	Observation of the whole breast Available for other exposures including spot exposure	

EDR mode						Display Parameter																	
Auto		Semi	Fix		Preset mode	Two-image Display																	
						Left Image						Right Image						One-image Display					
PRIEF	Type	Type	Lfix	Sfix		DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	VI	III	2.0	200	A	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
-	IV	III	2.6	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0	2	F	0.5	5	1	0.0
4S	I	III	2.0	200	A	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0	2	E	0.5	5	1	0.0
1	II	IV	2.2	200	A	5	A	0.0	4	0	3.0	5	A	0.0	4	0	0.0	5	A	0.0	4	0	3.0
2	I	I	1.8	40	A	8	E	1.0	5	1	0.0	8	E	0.0	5	1	0.0	8	E	1.0	5	1	0.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Enhancing Type (RT)
- Frequency Enhancement (RE)

Appendix YIV

Flexible Noise Control Software Parameters

Exposure Menu Name	Related Menu	MPM
CHEST,FRN P→A	Chest, General; Chest, Frn (A—>P)	0200

As for exposure menu names, typical menus are written. Associated menus are those which will be processed under exactly the same conditions as exposure menus are processed. Processing conditions are determined by the MPM code.

	FFC	FNB	FNT	FNE	GA	GT	GC	GS	MRB	MRT	MRE	MDB	MDT	MDE
Left Image	A	E	B	0.5	1.0	E	1.60	-0.20	D	R	0.3	A	B	0.4
Right Image					0.9	A	1.50	-0.20	D	R	6.0	A	B	0.0
One image					1.0	E	1.60	-0.20	D	R	0.3	A	B	0.4

1 Menus to which FNC is applied by default

Only menus to which FNC is set to be applied by default are described in Chapter YIV. For other menus that are not covered here, FNC is set to be OFF by default.

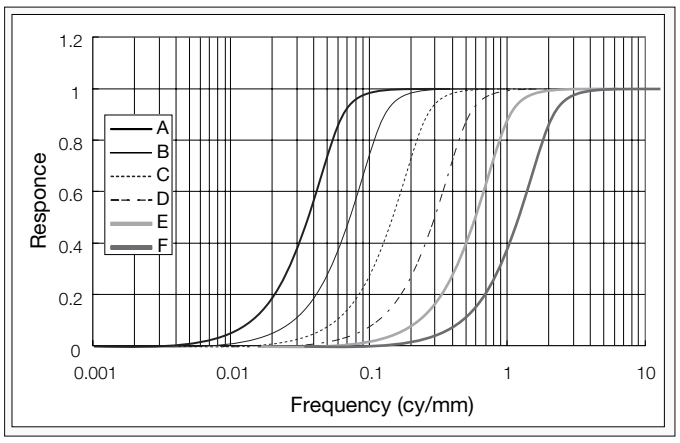
2 FNC parameters

There are the following four FNC parameters: FFC, FNB, FNT, and FNE. The above example shows conditions for Chest, Frn images.

2.1 FFC : This is a parameter to determine to what extent FNC is to be applied depending on the dose of X-rays applied for irradiation.

- A With decreasing doses of X-rays irradiated, the application of FNC increases. (For radiographs in general)
- M Irrespective of the dose of X-rays irradiated, FNC is applied to a certain fixed degree. (For linacgraphy)

2.2 FNB : This is a parameter to determine to what extent FNC is to be applied in relation to frequency components.
"A" controls noise over the entire gamut of frequency components, from low to high. As the parameter value proceeds toward "F," FNC is applied predominantly to higher frequency components.

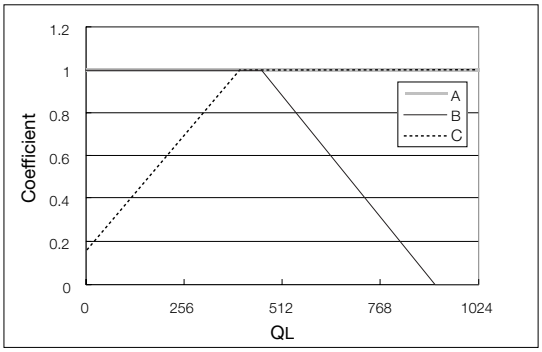


2.3 FNT : This is a parameter to determine to what extent FNC is to be applied in relation to image density.

A Independent of density, the degree of application of FNC remains constant.

B With increasing density, the degree of application of FNC decreases.

C With decreasing density, the degree of application of FNC decreases.



2.4 FNE : This is a parameter to determine to what extent FNC is to be applied. It is defined over a range of 0.0 to 1.0. The value 1.0 denotes the full application of FNC and 0.0 while the value 0.0 represents no FNC application.

3 Gray-scale processing parameters (GA, GT, GC, and GS)

For the meanings of the individual parameters, refer to Chapter YII. Normally, even when FNC is applied, there is no need to make changes to gray-scale processing conditions.

4 MFP processing parameters (MRB, MRT, MRE, MDB, MDT and MDE)

For the meanings of the MFP processing parameters, refer to Chapter YII. Normally, optimum frequency processing conditions vary depending on whether or not FNC is applied. Generally, when FNC is being applied, the degree of frequency enhancement is to be increased. (This is accomplished by either increasing MRE or changing MRT.)

● Features of FNC

1. It is impossible to make things invisible visible. However, when signals are weak and sometimes become buried in noise, the effect of making them easier to see may be expected.
2. Frequency processing enhances noise along with signals. On the other hand, since noise is controlled on FNC-applied images, enhancement will be able to be applied to them to a greater degree than to conventionally prepared images. (With noise being approximately the same as before, greater signal enhancement is possible.)

➤ Precautions and hints

1. By virtue of the suppression of noise by FNC, the reduction of radiological exposure may become possible. However, reducing the dose of X-rays for irradiation entails a weakening of signals. So, when you determine the dose of X-rays to be applied, please make a visual check on actually exposed images for their suitability for observation.

2. Just as is the case with any image processing, excessive application of FNC can produce artificially looking results. When you make a condition change, please make a visual check on actually exposed images for their suitability for observation. FNC condition changes can be performed by means of the User Utility on the CR Console. (Password-based control)

3. FNC can be implemented only on the CR Console. Images in the form of FNC-applied data can be transferred to other equipment such as HI-C. Please note that FNC cannot be performed on other equipment than the CR Console.

4. FNC parameters will not be indicated on film. When hardcopy films are directly output from the CR Console, only a mark indicating whether or not FNC has been applied will be indicated on each film. In the case of other equipment, such a mark may or may not be shown on film depending on the version and other factors of such equipment.

5. FNC is not applied to images shown on the display monitor of the CR Console.

6. FNC views image S values to determine to what degree the noise should be controlled, requiring thus you to check S values periodically. S values can be controlled effectively by using the RU QC tool (optional software). If no QC tool is used, you can determine rough behaviors of the S values by using an appropriately controlled X-ray generator to perform exposures and checking those values detected on image data read under certain conditions. The guideline to be adopted is about twice the control range.

● Chest / Vertebral Body / Pelvis

Exposure Menu Name	Related Menu	MPM
CHEST,FRN P->A	Chest, General; Chest, Frn (A—>P)	0200
CERVICAL SPINE	Cervical Spine, Frn; Cervical Spine, Lat; Cervical Spine, Flexion; Cervical Spine, Extension; Cervical Spine, RAO; Cervical Spine, LAO; Cervical Spine, Obl	0101
OPEN MOUTH		0106
THORACIC SPINE,FRN		0201
THORACIC SPINE,LAT		0209
THORACIC SPINE,OBL		0211
LUMBAR SPINE	Lumbar Spine, Frn; Lumbar Spine, RAO; Lumbar Spine, LAO; Lumbar Spine, Obl	0501
SACRUM/COCCYX	Sacrum/Coccyx, Frn; Sacrum/Coccyx, Lat; Sacroiliac Jnt, Frn; Sacroiliac Jnt, Obl; Ischium, Frn; Ischium, Lat; Sacrum, Frn; Sacrum, Lat; Coccyx, Frn; Coccyx, Lat	0502
HIP JNT	Hip Jnt, Frn; Lauenstein	0508
PELVIMETRY	Guthmann; Martius	0504

FNC Processing
- Filter Control Type of FNC (FFC)
- Balance Type of FNC (FNB)
- Type of FNC (FNT)
- Enhancement of FNC (FNE)

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Multi-Objective Frequency Processing
- Balance Type (MRB)
- Enhancing Type (MRT)
- Enhancement (MRE)

Multi-Objective DRC Processing
- Balance Type (MDB)
- Enhancing Type (MDT)
- Enhancement (MDE)

	FFC	FNB	FNT	FNE	GA	GT	GC	GS	MRB	MRT	MRE	MDB	MDT	MDE
Left Image	A	E	B	0.5	1.0	E	1.60	-0.20	D	R	0.3	A	B	0.4
Right Image	–	–	–	–	0.9	A	1.50	-0.20	D	R	6.0	A	B	0.0
One image	A	E	B	0.5	1.0	E	1.60	-0.20	D	R	0.3	A	B	0.4
Left Image	A	C	C	0.6	1.1	F	0.60	0.30	C	P	0.8	A	K	0.2
Right Image	–	–	–	–	1.0	A	0.50	0.10	D	T	6.0	A	K	0.0
One image	A	C	C	0.6	1.1	F	0.60	0.30	C	P	0.8	A	K	0.2
Left Image	A	C	C	0.6	1.0	G	0.70	0.25	C	Q	0.8	A	F	0.3
Right Image	–	–	–	–	1.0	A	0.50	0.10	D	T	6.0	A	K	0.0
One image	A	C	C	0.6	1.0	G	0.70	0.25	C	Q	0.8	A	F	0.3
Left Image	A	C	C	0.6	1.1	G	0.90	0.30	C	T	0.8	A	M	0.2
Right Image	–	–	–	–	1.0	A	0.70	0.20	D	T	6.0	A	M	0.0
One image	A	C	C	0.6	1.1	G	0.90	0.30	C	T	0.8	A	M	0.2
Left Image	A	C	C	0.6	1.0	G	0.90	0.10	C	T	0.8	A	B	0.2
Right Image	–	–	–	–	1.0	A	1.00	0.00	D	T	6.0	A	B	0.0
One image	A	C	C	0.6	1.0	G	0.90	0.10	C	T	0.8	A	B	0.2
Left Image	A	C	C	0.6	1.1	G	0.90	0.40	C	T	0.8	A	M	0.2
Right Image	–	–	–	–	1.0	A	0.70	0.10	D	T	6.0	A	M	0.0
One image	A	C	C	0.6	1.1	G	0.90	0.40	C	T	0.8	A	M	0.2
Left Image	A	C	C	0.6	1.1	O	0.90	0.40	C	P	0.5	A	J	0.4
Right Image	–	–	–	–	1.0	A	0.90	0.10	D	T	6.0	A	J	0.0
One image	A	C	C	0.6	1.1	O	0.90	0.40	C	P	0.5	A	J	0.4
Left Image	A	C	C	0.6	0.9	O	0.90	0.20	C	P	0.6	A	E	0.5
Right Image	–	–	–	–	0.9	A	1.20	0.10	D	T	6.0	A	E	0.0
One image	A	C	C	0.6	0.9	O	0.90	0.20	C	P	0.6	A	E	0.5
Left Image	A	C	C	0.6	1.3	D	0.60	0.25	C	P	0.6	A	F	0.5
Right Image	–	–	–	–	0.9	A	0.60	0.10	D	T	6.0	A	F	0.0
One image	A	C	C	0.6	1.3	D	0.60	0.25	C	P	0.6	A	F	0.5
Left Image	A	B	C	0.7	1.1	D	0.60	0.20	B	Q	0.7	A	J	0.1
Right Image	–	–	–	–	0.9	A	0.70	0.00	C	Q	5.0	A	J	0.0
One image	A	B	C	0.7	1.1	D	0.60	0.20	B	Q	0.7	A	J	0.1

Appendix Z

Precautions for Exposure

Pages

Precautions to Take Before Exposure ____ Z-2

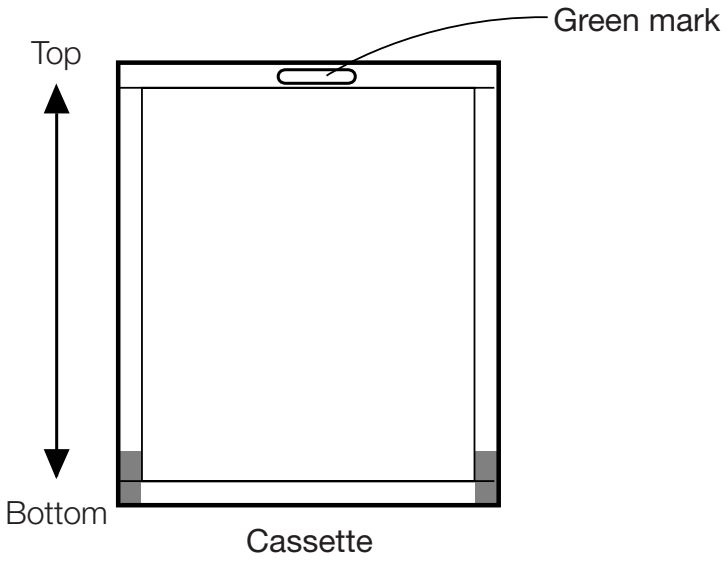
Precautions to Take in Each Mode ____ Z-3

Z

Precautions to Take Before Exposure

This section describes precautions to take in each mode.

It is recommended to use Bucky's device to remove scatter rays and obtain a high-quality image.
When carrying out exposure using a stationary grid, it is recommended to use a 60 lines/cm grid with fewer artifacts.
Use a grid whose line direction is parallel to the cassette's vertical direction (between top and bottom).



Precautions to Take in Each Mode

This section describes some precautions that must be followed when making radiographic exposures in each of the following modes: Auto mode, Semi-auto mode, Semi-X mode, and Fix Mode.

1 Precautions for Exposure in the AUTO MODE

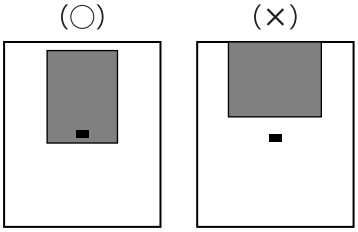
In the Auto mode, radiographic images that interfere with image reading are obtained in some cases due to variations in multileaf collimator settings on the X-ray exposure unit and/or the effects of scatter rays. If you encounter such cases, please contact your local authorized distributor for consultation and advice, and make radiographic exposures in a different mode such as the Semi-auto mode or the Fix mode.

Here are precautions to take in order to obtain stable image quality in the Auto mode:

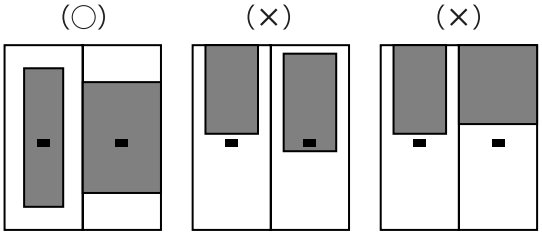
1. Radiation Field and IP Split Pattern Recognition.... (1.1)
2. Depiction of the Cervical Region.....(1.2)
3. Depiction of HIP JOINT AXL - 2 .....(1.3)
4. Cautions for “PANTOMO” X-ray Exposures Using a 10”×12” Cassette .....(1.4)
5. EDR Image Data Analysis .....(1.5)

1.1 Radiation Field and IP Split Pattern Recognition

- Be sure that the center (25×25mm) of the IP is in the radiation field. If the IP is split for multiple exposures, each center of the split portions must be covered by the radiation field.



IP center: 25mm×25mm area (black rectangles in examples above) located in the center of the IP

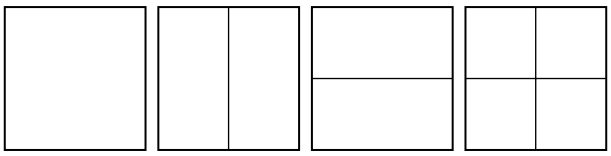


Center of the split portion: 25mm×25mm area (black rectangles in examples above) located in the center of each split portion

- Do not set the radiation field extremely small. Be sure to expose X-rays on one thirds or more of the length of each side of the IP.
- Be sure that each side of the radiation field does not overlap with the contrast medium. Error will occur if they overlap each other.

This subsection explains precautions to be exercised regarding “Radiation Field and IP Split Pattern Recognition” processing (hereafter referred to as PRIEF) which is performed when you make radiographic exposures in the Auto mode.

The “S” in PRIEF4S and PRIEF1S is a symbol to signify that IP-split recognition is possible. There are the following four split-IP exposure patterns:



Full-IP exposure | Half-split IP (vertical) | Half-split IP (horizontal) | Quarter-split IP

* When making multiple exposures on a split IP, a split portion(s) may be left unexposed.

Guidance as to which to use: PRIEF4S or PRIEF1S
Table Z-1 shows the relationships among anatomical regions to be radiographed, radiographic exposure methods, PRIEF4S and PRIEF1S.
Explanations on PRIEF4S and PRIEF1S are also provided along with precautions to take with them.

[Table. Z-1] At-a-glance guide to availability of PRIEF4S/PRIEF1S for each anatomical region/exposure method

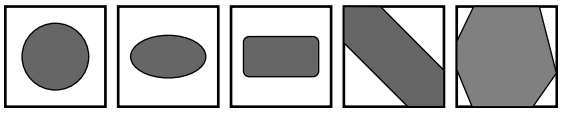
	Plain	Contrast Medium	Tomography
Head	4S	4S	4S (1 for pantomography)
Neck	4S	4S	1S
Chest	4S	4S (1 for esophagus)	1
Abdomen	4S	4S (1S for stomach and intestines)	1
Pelvis	4S	4S	1
Upper extremity	4S	4S	1
Lower extremity	4S	4S	1

Notes on PRIEF

[PRIEF 4S]

Used, with some exceptions, for both plain and contrast medium exposure menus, from head to lower extremities.

- The diaphragm shape will be any convex polygons including rectangle, circle, ellipse, track, etc.



[PRIEF 1]

Used to tomography menus for chest, abdomen, pelvis, upper and lower extremities.

- When the IP is not split and the diaphragm is closed, adjust the shape so that it is parallel to the IP side.
- When conducting multiple exposures with a split IP using the PRIEF 1 menu.
  1) do not close the diaphragm.
  2) expose all the split portions of the IP.

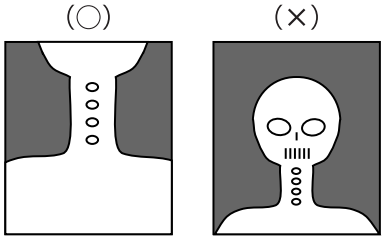
[PRIEF 1S]

Used to neck tomography and stomach contrast medium menus.

- When the IP is not split and the diaphragm is closed, adjust the shape so that it is parallel to the IP side.

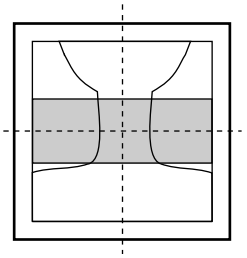
1.2 Depiction of the Cervical Region

- The radiation field must not include the whole head. Be sure to secure transparent portions on both sides of the neck.

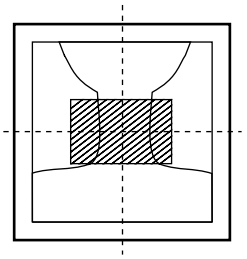


Use the “Skull, General” menu to include the whole head in the radiation field.

- For exposure of the pharynx and/or larynx, be sure that the neck comes to the center of the radiation field, especially in terms of upper and lower margins.

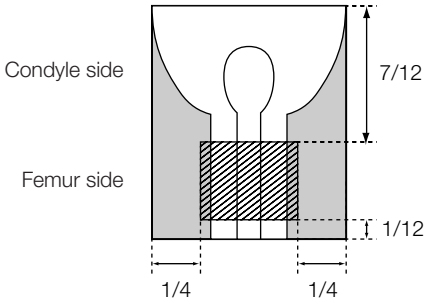


- In pharynx and/or larynx exposure, do not use lead characters in the oblique line section.



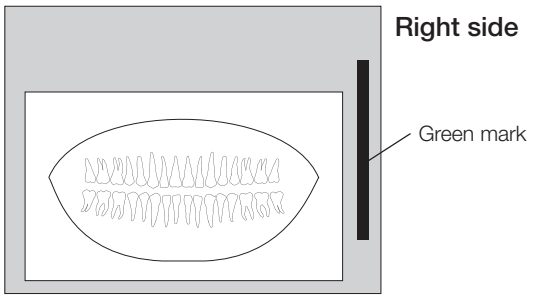
1.3 Depiction of HIP JOINT AXL - 2

- Make sure to position the region of interest to the slanted-line area shown below. Do not collimate further inside.
- Positioning should be done so that the condyle and the femur run along the longer edge. (Do not have them positioned against the shorter edge.)



1.4 Cautions for “PANTOMO” X-ray Exposures Using a 10"×12" Cassette

- To obtain properly displayed images, set the 10"×12" cassette in the dedicated cassette holder of the exposure unit so that the green mark on top of the cassette is positioned on the right side when viewed from the X-ray tube, as illustrated below.



10"x12" cassette

- For image output, the “PANTOMO” X-ray exposure menu (M2004) takes only an area of 15×30cm from the 10"×12" exposure area. If you wish an image be output using the entire 10"×12" area, use the “PANTOMO-2:T” (7004) exposure menu.

1.5 EDR Image Data Analysis

- Image unevenness appearing when the grid used for exposure is not correctly positioned in terms of the bulb, clothes shadow or unevenly radiated X-ray to the X-ray exposure area can be referred to as the problems occurring during the EDR image data analysis, which cause unstable density on the image. Avoid such unevenness in the X-ray exposure area as far as possible.
- If the target includes such materials as gypsum, denture, etc., stable density may not be obtained because such materials make it difficult to analyze EDR image data. In such a case, use the S-Shift/C-Shift or FIX MODE.
- For multiple exposures with a split IP, make exposure doses on each portion of the IP as equal as possible (maximum 1.6 times). In other words, for multiple exposures, submit each portion of the IP to the appropriate exposure dose according to the intended anatomical region as usual.

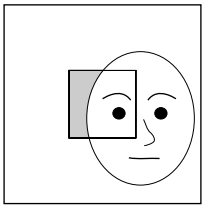
Precautions when using the AUTO MODE.

Mode type	Precautions
I	As this mode is available on the assumption that it extracts information concerning the skin, secure the positioning so that there is an area other than the target where the direct X-rays are incident.
II	No special precautions
III	Be sure to use the Ba contrast medium.
IV	1 Be sure to secure the positioning so that the X-rays are incident directly in the area outside the target. 2 As the reading latitude is fixed, it is necessary to control the tube voltage as usual according to the thickness of the target.
V	As the reading latitude is fixed, it is necessary to control the tube voltage as usual according to the thickness of the target.
VI	No special precautions
VII	No special precautions

2 Precautions for Exposure in the SEMI-AUTO MODE

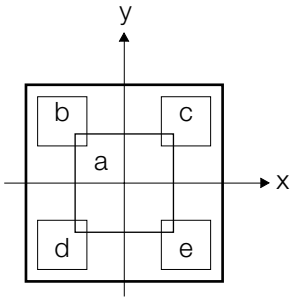
The precautions are common to Semi I, II, III or III(**).

- Center area of the IP 10×10cm (Semi I)
  7× 7cm (Semi II)
  5× 5cm (Semi III)
  Position the portion you need to display of ten in each of the 5×5cm (Semi III (**))center are as of the half-split IPs (both upper and lower halves and right and left halves) and the quarter-split IP.
- Never position anything other than the subject in the above mentioned areas. If anything other than the subject is positioned in such areas, the image density will become thinner. In addition, do not position any metals or artificial bones in such areas. The image density will become higher if such an object is positioned in such areas.



(×)

- It is necessary to control the tube voltage as usual according to the subject thickness.
  The following precautions should be observed for Semi IV.



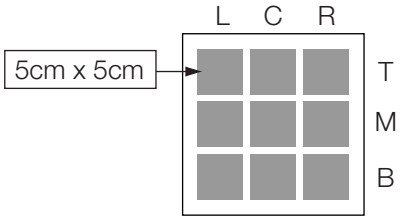
Area	Center Coordinate (x:y) cm	Size (cm)
a	(0, 0)	10×10
b	(-5, 7)	6×6
c	(5, 7)	6×6
d	(-5, -7)	6×6
e	(5, -7)	6×6

- Do not position transparent portions (area other than the subject) in the abovementioned five areas.
- It is necessary to control the tube voltage as usual according to the subject thickness.

The SEMI-AUTO MODE has been preset around the magnification menu.

3 Precautions for Exposure in the SEMI-X MODE

The user will select the nine areas accordingly, on which the SEMI-AUTO MODE applies. (See the illustration below.)
The same precautions as for the SEMI-AUTO MODE apply.



4 Precautions for Exposure in the FIX MODE

As reading conditions are fixed, exposure conditions must be controlled in the same way as for conventional X-ray exposure.
The reading conditions (sensitivity and latitude) have been preset according to the relevant menu in the FIX MODE. Thus, select the exposure conditions that correspond to that menu.

Maintenance and Inspection

1 Maintenance and Inspection Items Assigned to Specified Dealer

For periodical inspection of the equipment and necessary arrangements, consult our official dealer or local representative.

Index

A

Air filter 6-4

C

CALL Lamp 2-5
Cassette Processing Lamp 2-5
Cassette Processing Status Bar 2-6
Cassette Ready Lamp 2-5
Cassette Removal Lamp 2-5
Cassette Set Unit 2-4
Cleaning methods B-3

D

Display 2-6
Display Screen 2-5

E

Error codes 5-6
Error messages 5-5
Error (message) Screen 2-7, 5-5
Everyday handling B-3
External Device Connector 2-4

F

FCR XC-1 (CR-IR 355RU) 2-2

I

Image erasure 3-2
Imaging plate 2-2
Information to be printed on film C-2
Initial screen 4-2

L

Louver 6-4

M

Main Power Switch 2-4
Main Unit 2-4
Menu Selection Buttons 2-5
Message Display Field 2-6, 2-7, 5-5

O

Operation Panel 2-4, 2-5

P

Patient information/Exposure Information Display Field 2-6
Patient Information Input widnow 3-3
POWER Lamp 2-5
Power ON Switch 2-5
Power Plug 2-4
Power Save Lamp 2-5
Primary erasure B-2
Processing Status Bar 2-8

Q

Quitting the Utility 4-2

S

Scanner Cleaning 4-3
Selection-menu Display Field 2-6, 2-7, 5-5
Shutting Down the System 3-4
Starting Up the System 3-3
Starting Up the Utility 4-2
Storage conditions B-3

T

Title Display Field 2-7, 5-5
Title/Message Display Field 2-6

U

Utility TOP 4-2

Index

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